

## DESCRIPTION

Recessed medium distribution LED open downlight luminaire with 4 inch square aperture utilizing a LED array. Modular platform can be reconfigured from below the ceiling to accept a broad range of lamp modules and optical elements. Platform is suitable for 2x8 residential or commercial applications and can be used in direct contact with insulation. Platform + module + element combination produces square distribution with excellent light control and low aperture brightness.

## SPECIFICATION FEATURES

### Frame

Galvanized steel plaster frame with integral bar hanger receivers. Setscrews provide positive horizontal locking.

### Collar

Matte black aluminum collar adjusts vertically for 1/2" - 1" thick ceilings and can be rotated ± 7.5° thru the aperture. Integral gun sights facilitate the use of guide strings or laser lines. Shipped with a paint overspray protector.

### Housing

Double wall aluminum housing painted matte black for a visually dark interior. Removable hinged cover allow for top access. All fasteners are captive.

### Bar Hangers

Captive preinstalled bar hangers adjust from 8-1/2" to 24" wide; pass thru allows shortening without removal. Captive nail penetrates standard and engineered lumber. Mounting flange levels platform with ceiling. Integral clip attaches direction to tee grid.

### Gaskets

Closed cell gaskets achieve restrictive airflow requirements without additional caulking.

### Lamp Module

Integral mounting clips facilitate installation from top access or thru the aperture. Locking screws (provided)

lock lamp module to the housing. Electrical quick disconnect facilitates field service.

### LED Array

Field interchangeable and upgradable light engine provides a uniform source with high efficiency and no pixilation. Available in remote or proximity phosphors in various color temperatures. Select color rendering index (CRI) of 90, 95 or 97 minimum providing excellent color quality. Color accuracy within 2 SDCM.

### Primary Reflector

Segmented Miro® upper reflector yields a smooth square beam with uniform distribution. Diffuse glass mixing dome provides shielding to source and excellent color over angle uniformity over rated life.

### Lower Reflector

Aluminum parabolic reflector provides for 55° cutoff and is available in a wide range of specular and semi specular Alzak finishes. Corrugated baffle option provides additional brightness control. Available in self-flanged or metal trim ring versions. May be installed rimless with optional rimless adapter.

### Trim Retention

Mousetrap type springs pull flange tight to ceiling. Light trap eliminates spill light at edge of flange and reflector.

| Catalog #   | Type |
|-------------|------|
| Project     |      |
| Comments    | Date |
| Prepared By |      |

### Junction Box

(7) 1/2" trade size pry outs, (3) non-metallic cable. Listed for (8) #12 AWG (four in, four out) 90°C conductors and feed thru branch wiring. Wago® quick connects for field wiring.

### Driver

Integral 120 or 120-277V 50/60 Hz constant current driver provides noise free operation. Continuous, flicker-free leading or trailing edge phase cut dimming from 100 to 1% with select controls.

### Compliance

Thermally protected, cULus listed for damp locations. UL1598 wet location labeled, covered ceiling mount only. Suitable for direct contact with insulation. Restrictive airflow per ASTM E283. EMI/RFI emissions per FCC 47CFR Part 15 class B limits and suitable for residential and commercial use. Contains no mercury or lead and RoHS compliant. Zhaga certified luminaire. Photometric testing in accordance with IES LM79. LED life testing in accordance with LM80.

### Warranty

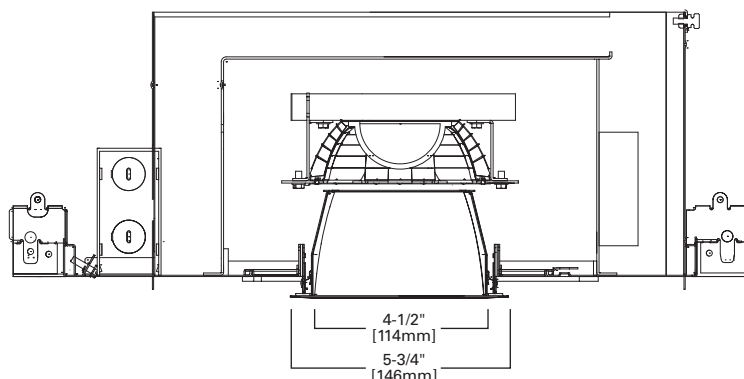
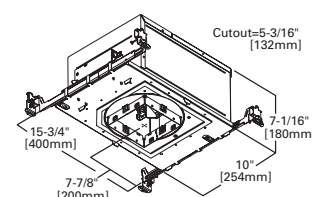
5 year warranty.



## P408ICAT MH4LED E4DC

Medium Distribution  
LED Open Downlight

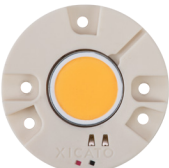
4-Inch Square Aperture



Refer to ENERGY STAR® Qualified Products List. Can be used to comply with California Title 24 High Efficacy requirements. Certified to California Title 20 Appliance Efficiency Database.



Eaton is a founding member of the Zhaga Consortium

| Delivered Performance                                                                                                                                                                    |            | V927         | V930 | V935 | V940 | D927 | D930 | A927          | A930 |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|------|------|------|------|------|---------------|------|-----|
|                                                                                                         | CRI (Min)  | 90           | 90   | 90   | 90   | 97   | 97   | 95            | 95   |     |
|                                                                                                                                                                                          | R9 (Min)   | 50           | 50   | 50   | 50   | 95   | 95   | 90            | 90   |     |
|                                                                                                                                                                                          | CCT (K5)   | 2700         | 3000 | 3500 | 4000 | 2700 | 3000 | 2700          | 3000 |     |
|                                                                                                                                                                                          | SDCM       | 2-Step       |      |      |      |      |      |               |      |     |
|                                                                                                         | Life (L70) | 50,000 Hours |      |      |      |      |      | 40,000 Hours* |      |     |
|                                                                                                                                                                                          | LPW**      | 54           | 57   | 63   | 70   | 43   | 47   | 43            | 46   |     |
|                                                                                                                                                                                          | Lumens     | 15W          | 775  | 822  | 902  | 1015 | 614  | 672           | 615  | 656 |
|                                                                                                                                                                                          |            | 20W          | 1051 | 1116 | 1224 | 1376 | 833  | 912           | 835  | 890 |
| Performance data based on goniometer measurements with 'E' driver option and E4DCMW lower shielding reflector.<br>*Projected lumen maintenance.<br>**LPW based on 15W 'E' driver option. |            |              |      |      |      |      |      |               |      |     |

## ORDERING INFORMATION

(Order housing platform, lamp module and optical element separately)

| Platform                                                                      | Accessories                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div></div> <p><b>P408ICAT</b> = 4" square housing platform, IC, airtight</p> | <div></div> <p> <b>RA4X4</b> = Rimless adapter for 4" housing platforms<br/> <b>EDC4X41</b> = Extended depth collar for 1" - 1-1/2" thick ceilings<br/> <b>L4X4HEX</b> = Matte Black Hex Cell Louver         </p> |

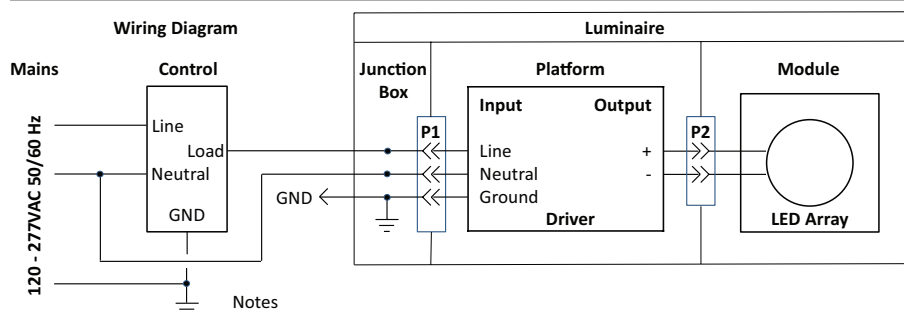
  

| Lamp Module                                             | Wattage                                                                     | Light Engine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Driver                                                                                                                                                                                            |
|---------------------------------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div></div> <p><b>MH4LED</b> = 4" square LED module</p> | <div></div> <p> <b>15</b> = 15 Watts<br/> <b>20</b> = 20 Watts         </p> | <div></div> <p> <b>V927</b> = Bridgelux Vero Series, Zhaga certified, 90 CRI min, 2700 K CCT<br/> <b>V930</b> = Bridgelux Vero Series, Zhaga certified, 90 CRI min, 3000 K CCT<br/> <b>V935</b> = Bridgelux Vero Series, Zhaga certified, 90 CRI min, 3500 K CCT<br/> <b>V940</b> = Bridgelux Vero Series, Zhaga certified, 90 CRI min, 4000 K CCT<br/> <b>D927</b> = Bridgelux Décor Series, Zhaga certified, 97 CRI min, 2700 K CCT<br/> <b>D930</b> = Bridgelux Décor Series, Zhaga certified, 97 CRI min, 3000 K CCT<br/> <b>A927</b> = Xicato XTM Artist Series, Zhaga compatible, 95 CRI min, 2700 K CCT<br/> <b>A930</b> = Xicato XTM Artist Series, Zhaga compatible, 95 CRI min, 3000 K CCT         </p> | <div></div> <p> <b>E</b> = 120 - 277V 50/60 Hz LE/TE phase cut dimming to 1% (dimming at 120V input only)<br/> <b>1ELTE</b> = 120V 60 Hz LE phase cut dimming to 1%, Lutron A-Series         </p> |

| Element                                                     | Texture                                    | Finish                                                                                                                                                                             | Flange Style                                                                                                  |
|-------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| <div></div> <p><b>E4DC</b> = 4" Open Die Cast Reflector</p> | <div></div> <p><b>[Blank]</b> = Smooth</p> | <div></div> <p> <b>Painted Finishes</b><br/> <b>MB</b> = Matte Black<br/> <b>MW</b> = Matte White<br/> <b>W</b> = Gloss White<br/> <b>MMS</b> = Matte Metallic Silver         </p> | <div></div> <p> <b>[Blank]</b> = Self-flanged<br/> <b>RL</b> = Rimless, Use with Rimless Adapter         </p> |

## WIRING DIAGRAM



## Notes

- Consult controls manufacturer for detailed wiring and conditions of acceptability
- Input voltage contingent on control and driver options selected
- Field wiring to confirm to all national and local codes
- Phase cut dimming at 120V input only.

## ENERGY

| ENERGY DATA           |                   |       |       |
|-----------------------|-------------------|-------|-------|
| E = LE & TE Phase Cut |                   |       |       |
| Input Voltage         | 120V              | 277V  |       |
| 15W                   | Input Power (W)   | 14.4  | 15.4  |
|                       | Input Current (A) | 0.121 | 0.059 |
|                       | Inrush (A)        | 0.16  | 0.288 |
| 20W                   | Input Power (W)   | 21.2  | 21.8  |
|                       | Input Current (A) | 0.178 | 0.082 |
|                       | Inrush (A)        | 0.218 | 0.403 |
| T Ambient -40 - +40°C |                   |       |       |
| Power Factor ≥ 0.90   |                   |       |       |
| Sound Rating Class A  |                   |       |       |
| THD ≤ 20%             |                   |       |       |

## COMPATIBLE CONTROLS

| Manufacturer | Series    | Model     | 15W                              |                                  |                               |                               | LE Start Time | 20W                              |                                             |                               |                    | LE Start Time |
|--------------|-----------|-----------|----------------------------------|----------------------------------|-------------------------------|-------------------------------|---------------|----------------------------------|---------------------------------------------|-------------------------------|--------------------|---------------|
|              |           |           | Minimum Luminaires (per Circuit) | Maximum Luminaires (per Circuit) | Minimum Measured Light Output | Maximum Measured Light Output |               | Maximum Luminaires (per Circuit) | Minimum Measured Light Output (per Circuit) | Maximum Measured Light Output | Minimum Luminaires |               |
| Lutron       | Ariadni   | AY-600P   | 1                                | 37                               | 9%                            | 98%                           | <1s           | 1                                | 27                                          | 11%                           | 98%                | <1s           |
| Lutron       | Contour   | CT103P    | 1                                | 62                               | 1%                            | 98%                           | >1s           | 1                                | 45                                          | 4%                            | 98%                | <1s           |
| Lutron       | Contour   | CT-600P   | 1                                | 37                               | 1%                            | 98%                           | >1s           | 1                                | 27                                          | 3%                            | 98%                | <1s           |
| Lutron       | Rotary    | D-600P    | 1                                | 37                               | 1%                            | 98%                           | >1s           | 1                                | 27                                          | 3%                            | 98%                | >1s           |
| Lutron       | Diva      | DV-600P   | 1                                | 37                               | 1%                            | 98%                           | >1s           | 1                                | 27                                          | 2%                            | 98%                | <1s           |
| Lutron       | Glyder    | GL-600P   | 1                                | 37                               | 2%                            | 99%                           | <1s           | 1                                | 27                                          | 7%                            | 98%                | <1s           |
| Lutron       | Lumia     | LG-600PH  | 1                                | 37                               | 1%                            | 98%                           | >1s           | 1                                | 27                                          | 1%                            | 98%                | >1s           |
| Lutron       | Nova      | N-600     | 1                                | 37                               | 0%                            | 99%                           | >1s           | 1                                | 27                                          | 1%                            | 99%                | <1s           |
| Lutron       | Skylark   | S-600P    | 1                                | 37                               | 1%                            | 98%                           | >1s           | 1                                | 27                                          | 1%                            | 98%                | >1s           |
| Lutron       | Centurion | C-600P    | 1                                | 37                               | 3%                            | 99%                           | >1s           | 1                                | 27                                          | 5%                            | 99%                | >1s           |
| Lutron       | Ariadni   | AYLV-600P | 1                                | 28                               | 4%                            | 98%                           | <1s           | 1                                | 20                                          | 9%                            | 98%                | <1s           |
| Lutron       | Glyder    | GLV600    | 1                                | 28                               | 1%                            | 99%                           | <1s           | 1                                | 20                                          | 3%                            | 99%                | <1s           |
| Lutron       | Diva      | DVLV-600P | 1                                | 28                               | 2%                            | 97%                           | <1s           | 1                                | 20                                          | 6%                            | 98%                | <1s           |
| Lutron       | Lumina    | LG-103P   | 1                                | 62                               | 5%                            | 98%                           | <1s           | 1                                | 45                                          | 10%                           | 98%                | <1s           |
| Lutron       | Skylark   | SLV-600P  | 1                                | 28                               | 1%                            | 98%                           | >1s           | 1                                | 20                                          | 3%                            | 98%                | >1s           |
| Lutron       | Nova      | NTLV600   | 1                                | 28                               | 9%                            | 99%                           | <1s           | 1                                | 20                                          | 12%                           | 99%                | <1s           |
| Lutron       | Nova      | NT600     | 1                                | 37                               | 2%                            | 99%                           | >1s           | 1                                | 27                                          | 4%                            | 99%                | >1s           |

## COMPATIBLE CONTROLS

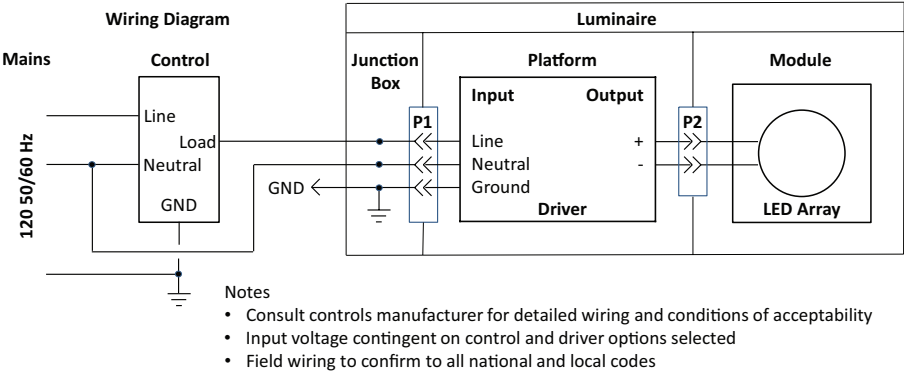
| Manufacturer | Series                            | Model                                         | 15W                             |                                 | Minimum Measured Light Output | Maximum Measured Light Output | LE Start Time | 20W                             |                                 | Minimum Measured Light Output | Maximum Measured Light Output | LE Start Time |
|--------------|-----------------------------------|-----------------------------------------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|---------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------|---------------|
|              |                                   |                                               | Minimum Luminaires (per Output) | Maximum Luminaires (per Output) |                               |                               |               | Minimum Luminaires (per Output) | Maximum Luminaires (per Output) |                               |                               |               |
| Lutron       | Maestro                           | MACL-153M(_)*                                 | 1                               | 10                              | 20%                           | 98%                           | <1s           | -                               | -                               | -                             | -                             | -             |
| Lutron       | Maestro Wireless                  | MRF2-6ND                                      | 1                               | 10                              | 20%                           | 99%                           | >1s           | 1                               | 7                               | 19%                           | 100%                          | >1s           |
| Lutron       | Maestro Wireless                  | MRF2-6ELV                                     | -                               | -                               | -                             | -                             | -             | 1                               | 7                               | 19%                           | 100%                          | >1s           |
| Lutron       | RadioRA2 1000 W                   | RRD-10ND                                      | 1                               | 10                              | 20%                           | 99%                           | >1s           | 1                               | 7                               | 19%                           | 100%                          | >1s           |
| Lutron       | RadioRA2 Adaptive Dimmer          | RRD-6NA                                       | -                               | -                               | -                             | -                             | -             | 1                               | 7                               | 19%                           | 100%                          | >1s           |
| Lutron       | HomeWorks QS 600 W                | HQRD-6ND                                      | 1                               | 10                              | 20%                           | 99%                           | >1s           | 1                               | 7                               | 19%                           | 100%                          | >1s           |
| Lutron       | HomeWorks QS 1000 W               | HQRD-10ND                                     | 1                               | 10                              | 20%                           | 99%                           | >1s           | 1                               | 7                               | 19%                           | 100%                          | >1s           |
| Lutron       | HomeWorks QS Adaptive Dimmer      | HQRD-6NA                                      | -                               | -                               | -                             | -                             | -             | 1                               | 7                               | 19%                           | 100%                          | >1s           |
| Lutron       | HomeWorks 600 W Dimmer            | HxD-6ND                                       | 1                               | 23                              | 19%                           | 99%                           | >1s           | 1                               | 15                              | 20%                           | 99%                           | >1s           |
| Lutron       | "Grafik Eye 3000/ HomeWorks"      | "Grafik Eye 3000 Family/ HWI-WPM-6D-120"      | 1                               | 35                              | 20%                           | 98%                           | >1s           | 1                               | 22                              | 20%                           | 100%                          | >1s           |
| Lutron       | "Grafik QS/ Wallbox Power Module" | "Grafik Eye QS Main Unit Family/ LQRJ-WPM-6P" | 1                               | 35                              | 20%                           | 98%                           | >1s           | 1                               | 22                              | 20%                           | 100%                          | >1s           |
| Lutron       | RPM-4U Module (LCP, HomeWorks,    | HW-RPM-4U-120,                                | 1                               | 86                              | 20%                           | 96%                           | >1s           | 1                               | 55                              | 18%                           | 97%                           | >1s           |
|              | GRAFIK Systems, Quantum)          | LP-RPM-4U-120                                 |                                 |                                 |                               |                               |               |                                 |                                 |                               |                               |               |
| Lutron       | RPM-4A Module (LCP, HomeWorks,    | HW-RPM-4A-120,                                | 1                               | 53                              | 19%                           | 99%                           | >1s           | 1                               | 34                              | 19%                           | 98%                           | >1s           |
|              | GRAFIK Systems, Quantum)          | LP-RPM-4A-120                                 |                                 |                                 |                               |                               |               |                                 |                                 |                               |                               |               |
| Lutron       | Panel module                      | GP (Harrier) Card                             | -                               | -                               | -                             | -                             | -             | 1                               | 50                              | 19%                           | 97%                           | >1s           |
| Lutron       | Stanza                            | SZ-6ND                                        | 1                               | 23                              | 19%                           | 99%                           | >1s           | 1                               | 15                              | 20%                           | 99%                           | >1s           |
| Lutron       |                                   | "PHPM-PA with Grafik Eye QS Main Unit"        | 1                               | 71                              | 19%                           | 98%                           | >1s           | 1                               | 55                              | 20%                           | 99%                           | >1s           |
| Lutron       |                                   | "PHPM-WBX with 3-wire fluorescent control"    | 1                               | 71                              | 19%                           | 98%                           | >1s           | 1                               | 55                              | 20%                           | 99%                           | >1s           |

## COMPATIBLE CONTROLS

| Manufacturer | Series           | Model        | 15W                              |                                  | Maximum Measured | Minimum Measured | LE Start Time | 20W                |                    | Maximum Measured | Minimum Measured | LE Start Time |
|--------------|------------------|--------------|----------------------------------|----------------------------------|------------------|------------------|---------------|--------------------|--------------------|------------------|------------------|---------------|
|              |                  |              | Minimum Luminaires (per circuit) | Maximum Luminaires (per circuit) |                  |                  |               | Minimum Luminaires | Maximum Luminaires |                  |                  |               |
| Vantage      | Enclosure Module | SDM12 EM     | 1                                | 25                               | 96.1%            | 1.7%             | 3.4 s         | 1                  | 17                 | 95.9%            | 0.2%             | 5 s           |
| Vantage      | Enclosure Module | EDIMMOD      | 1                                | 37                               | 98.8%            | 3.8%             | 2.4 s         | 1                  | 25                 | 95.8%            | 4.9%             | 1.9 s         |
| Vantage      | ScenePoint       | DS / RD      | 1                                | 8                                | 96.1%            | 1.7%             | 3.4 s         | 1                  | 7                  | 95.9%            | 0.2%             | 5 s           |
| Vantage      | RFLC             | DRD4         | 1                                | 8                                | 100%             | 6.3%             | 2.3 s         | 1                  | 7                  | 100%             | 8.4%             | 1.9 s         |
| Crestron     | Green Light      | GLX-DIM6     | --                               | --                               | 100%             | 15%              | --            | --                 | --                 | 100%             | 9%               | --            |
| Crestron     | Green Light      | GLXX-2DIM8   | --                               | --                               | 100%             | 15%              | --            | --                 | --                 | 100%             | 9%               | --            |
| Crestron     | Green Light      | CLS-EXP-DIMU | --                               | --                               | 100%             | 8%               | --            | --                 | --                 | 100%             | 11%              | --            |
| Crestron     | Green Light      | DIN-1DIM4    | --                               | --                               | 100%             | 6%               | --            | --                 | --                 | 100%             | 7%               | --            |
| Crestron     | Green Light      | DIN-1DIMU4   | --                               | --                               | 100%             | 14%              | --            | --                 | --                 | 100%             | 9%               | --            |
| Savant       |                  | LMD-4120     | --                               | --                               | 100%             | 3.5%             | <1 s          | --                 | --                 | 100%             | 2.7%             | <1 s          |
| Savant       |                  | LMD-8120     | --                               | --                               | 100%             | 10.1%            | <1 s          | --                 | --                 | 100%             | 10.4%            | <1 s          |
| Savant       |                  | LMD-IN120    | --                               | --                               | 100%             | 3.5%             | <1 s          | --                 | --                 | 100%             | 3.1%             | <1 s          |

| Manufacturer | Series | Model       | 15W                              |                                  | Maximum Measured | Minimum Measured | LE Start Time | 20W                |                    | Maximum Measured | Minimum Measured | LE Start Time |
|--------------|--------|-------------|----------------------------------|----------------------------------|------------------|------------------|---------------|--------------------|--------------------|------------------|------------------|---------------|
|              |        |             | Minimum Luminaires (per circuit) | Maximum Luminaires (per circuit) |                  |                  |               | Minimum Luminaires | Maximum Luminaires |                  |                  |               |
| CWD          | Ilumen | SC277-06-UN | 1                                | 38                               | 100%             | 13%              | <1 s          | 1                  | 28                 | 99.40%           | 16.58%           | <1 s          |
| CWD          | Aspire | 9530AW      | 1                                | 30                               | 100%             | 5%               | <1 s          | 1                  | 21                 | 100.00%          | 13.07%           | <1 s          |
| CWD          | Skye   | DE06P       | 1                                | 30                               | 98%              | 11%              | <1 s          | 1                  | 21                 | 96.78%           | 14.81%           | <1 s          |
| CWD          | Devine | RI061       | 1                                | 30                               | 99%              | 21%              | >1 s          | 1                  | 21                 | 98.81%           | 24.23%           | >1 s          |
| CWD          | Devine | TAL06P      | 1                                | 37                               | 100%             | 10%              | <1 s          | 1                  | 27                 | 99.22%           | 11.91%           | <1 s          |
| CWD          | Toggle | DAL06P      | 1                                | 37                               | 100%             | 4%               | <1 s          | 1                  | 27                 | 99.16%           | 5.66%            | <1 s          |
| CWD          | Skye   | SAL06P      | 1                                | 37                               | 100%             | 9%               | <1 s          | 1                  | 27                 | 99.16%           | 13.00%           | <1 s          |
| CWD          | Skye   | SLC06P      | 1                                | 37                               | 99%              | 2%               | >1 s          | 1                  | 27                 | 98.27%           | 1.76%            | >1 s          |
| CWD          | Devine | DLC06P      | 1                                | 18                               | 99%              | 2%               | >1 s          | 1                  | 13                 | 98.57%           | 3.09%            | <1 s          |
| CWD          | Toggle | TI061       | 1                                | 30                               | 97%              | 5%               | <1 s          | 1                  | 21                 | 96.36%           | 12.58%           | <1 s          |
| CWD          | Smart  | AAL06       | 1                                | 37                               | 99%              | 10%              | <1 s          | 1                  | 27                 | 98.51%           | 13.33%           | <1 s          |

WIRING DIAGRAM



ENERGY

| ENERGY DATA           |                   |       |
|-----------------------|-------------------|-------|
| 1ELTE = LE Phase Cut  |                   |       |
| 15W                   | Input Voltage     | 120V  |
|                       | Input Power (W)   | 16.3  |
|                       | Input Current (A) | 0.14  |
|                       | Inrush (A)        | 1.128 |
| 20W                   | Input Power (W)   | 23.2  |
|                       | Input Current (A) | 0.195 |
|                       | Inrush (A)        | 1.112 |
| T Ambient -40 - +40°C |                   |       |
| Power Factor ≥ 0.90   |                   |       |
| Sound Rating Class A  |                   |       |
| THD ≤ 20%             |                   |       |

## COMPATIBLE CONTROLS

| Manufacturer | Series                         | Model              | 15W                |                    | Maximum Measured | Minimum Measured | LE Start Time | 20W                |                    | Maximum Measured | Minimum Measured | LE Start Time |
|--------------|--------------------------------|--------------------|--------------------|--------------------|------------------|------------------|---------------|--------------------|--------------------|------------------|------------------|---------------|
|              |                                |                    | Minimum Luminaires | Maximum Luminaires |                  |                  |               | Minimum Luminaires | Maximum Luminaires |                  |                  |               |
| Lutron       | Nova T                         | NTLV-600-CPN0199   | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
| Lutron       | Maestro Wireless               | MRF2-6ND-120       | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
| Lutron       | RadioRA2 1000 W                | RRD-10ND           | 1                  | 13                 | 100%             | 1%               | <1s           | 1                  | 13                 | 100%             | 1%               | <1s           |
| Lutron       | RadioRA2 Adaptive Dimmer       | RRD-6NA            | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
| Lutron       | RadioRA 600 W                  | RA-6ND             | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
| Lutron       | RadioRA 1000 W                 | RA-10ND            | 1                  | 13                 | 100%             | 1%               | <1s           | 1                  | 13                 | 100%             | 1%               | <1s           |
| Lutron       | HomeWorks QS 600 W             | HQRD-6ND           | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
| Lutron       | HomeWorks QS 1000 W            | HQRD-10ND          | 1                  | 13                 | 100%             | 1%               | <1s           | 1                  | 13                 | 100%             | 1%               | <1s           |
| Lutron       | HomeWorks QS Adaptive Dimmer   | HQRD-6NA           | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
| Lutron       | HomeWorks QS WPM               | HQRJ-WPM-6D-120    | 1                  | 10                 | 100%             | 1%               | <1s           | 1                  | 10                 | 100%             | 1%               | <1s           |
| Lutron       | HomeWorks 600 W Dimmer         | HRD-6ND            | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
| Lutron       | HomeWorks 1000 W dimmer        | HWD-10ND, HRD-10ND | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
|              | HomeWorks WPM                  | HWI-WPM-6D-120     | 1                  | 10                 | 100%             | 1%               | <1s           | 1                  | 10                 | 100%             | 1%               | <1s           |
| Lutron       | GRAFIK Eye QS                  | QSGR-, QSGRJ-      | 1                  | 10                 | 100%             | 1%               | <1s           | 1                  | 10                 | 100%             | 1%               | <1s           |
|              | GRAFIK Eye 3000                | GRX-3100, GRX-3500 | 1                  | 10                 | 100%             | 1%               | <1s           | 1                  | 10                 | 100%             | 1%               | <1s           |
| Lutron       | RPM-4U Module (LCP, HomeWorks, | HW-RPM-4U-120,     | 1                  | 26                 | 100%             | 1%               | <1s           | 1                  | 26                 | 100%             | 1%               | <1s           |
|              | GRAFIK Systems, Quantum)       | LP-RPM-4U-120      |                    |                    |                  |                  |               |                    |                    |                  |                  |               |
| Lutron       | RPM-4A Module (LCP, HomeWorks, | HW-RPM-4A-120,     | 1                  | 13                 | 100%             | 1%               | <1s           | 1                  | 13                 | 100%             | 1%               | <1s           |
|              | GRAFIK Systems, Quantum)       | LP-RPM-4A-120      |                    |                    |                  |                  |               |                    |                    |                  |                  |               |
| Lutron       | GP Panels                      | Various            | 1                  | 26                 | 100%             | 1%               | <1s           | 1                  | 26                 | 100%             | 1%               | <1s           |
| Lutron       | Stanza                         | SZ-6ND             | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
| Lutron       | "Ariadni® C•L® 250 W dimmer"   | AYCL-253P-         | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
| Lutron       | "Diva® C•L® 250 W dimmer"      | DVCL-253P- S       | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |
|              |                                | DVSCCL-253P        | 1                  | 8                  | 100%             | 1%               | <1s           | 1                  | 8                  | 100%             | 1%               | <1s           |

## COMPATIBLE CONTROLS

| Manufacturer   | Series           | Model          | 15W                |                    | Maximum Measured | Minimum Measured | LE Start Time | 20W                |                    | Maximum Measured | Minimum Measured | LE Start Time |
|----------------|------------------|----------------|--------------------|--------------------|------------------|------------------|---------------|--------------------|--------------------|------------------|------------------|---------------|
|                |                  |                | Minimum Luminaires | Maximum Luminaires |                  |                  |               | Minimum Luminaires | Maximum Luminaires |                  |                  |               |
| Vantage        | Enclosure Module | SDM12 EM       | 1                  | 21                 | 95.1%            | 1.0%             | 1.90s         | 1                  | 17                 | 95.3%            | 1.0%             | 1.70s         |
| Vantage        | Enclosure Module | EDIMMOD        | 1                  | 31                 | 95.8%            | 0.9%             | 1.90s         | 1                  | 25                 | 96.2%            | 1.0%             | 1.80s         |
| Vantage        | ScenePoint       | DS / RD        | 1                  | 7                  | 95.1%            | 1.0%             | 1.90s         | 1                  | 4                  | 95.3%            | 1.0%             | 1.70s         |
| Crestron       | Green Light      | GLX-DIM6       | --                 | --                 | 100%             | 1%               | --            | --                 | --                 | 100%             | 1%               | --            |
| Crestron       | Green Light      | CLX-2DIM8      | --                 | --                 | 100%             | 1%               | --            | --                 | --                 | 100%             | 1%               | --            |
| Crestron       | Green Light      | GLXX-2DIM8     | --                 | --                 | 100%             | 1%               | --            | --                 | --                 | 100%             | 1%               | --            |
| Crestron       | Green Light      | CLS-EXP-DIM    | --                 | --                 | 100%             | 1%               | --            | --                 | --                 | 100%             | 1%               | --            |
| Crestron       | Green Light      | CLS-C6         | --                 | --                 | 100%             | 1%               | --            | --                 | --                 | 100%             | 1%               | --            |
| Crestron       | Green Light      | CLW-DIMEX      | --                 | --                 | 100%             | 1%               | --            | --                 | --                 | 100%             | 1%               | --            |
| Crestron       | Green Light      | CLX-1DELV4     | --                 | --                 | 100%             | 1%               | --            | --                 | --                 | 100%             | 1%               | --            |
| Crestron       | Green Light      | DIN-1DIMU4     | --                 | --                 | 100%             | 1%               | --            | --                 | --                 | 100%             | 1%               | --            |
| Cooper Control | ilumin           | SC277-06-UN-1P | 1                  | 38                 | 99%              | 0%               | >1s           | 1                  | 28                 | 99%              | 0%               | <1s           |
| Savant         | --               | LMD-8120       | --                 | --                 | 100%             | 3.0%             | <1s           | --                 | --                 | 100%             | 3.0%             | <1s           |
| Savant         | --               | LMD-IN120      | --                 | --                 | 100%             | 4.0%             | <1s           | --                 | --                 | 100%             | 4.0%             | <1s           |
| Savant         | --               | WCD-101xx      | --                 | --                 | 100%             | 3%               | <1s           | --                 | --                 | 100%             | 0.03             | <1s           |

## FINISH MULTIPLIERS

|                  | MB   | MW   | W    | MMS  |
|------------------|------|------|------|------|
| [Blank] = Smooth | 0.76 | 1.04 | 1.04 | 0.82 |

## LIGHTING FACTS

**LED lighting facts®**  
A Program of the U.S. DOE

Light Output (Lumens) **822**  
Watts **14.46**  
Lumens per Watt (Efficacy) **56.85**

Color Accuracy  
Color Rendering Index (CRI) **90**

Light Color  
Correlated Color Temperature (CCT) **3000 (Bright White)**

2700K 3000K 4500K 6500K

Warm White Bright White Daylight

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit [www.lightingfacts.com](http://www.lightingfacts.com) for the Label Reference Guide.

Registration Number: F4QJ-DBYTUE (8/25/2015)  
Model Number: P406TAT MH4LED15V930E E4DCMW [Upgrade: 9/25/2015]  
Type: Luminaire - Downlight

**LED lighting facts®**  
A Program of the U.S. DOE

Light Output (Lumens) **650**  
Watts **15**  
Lumens per Watt (Efficacy) **43.33**

Color Accuracy  
Color Rendering Index (CRI) **97**

Light Color  
Correlated Color Temperature (CCT) **3000 (Bright White)**

2700K 3000K 4500K 6500K

Warm White Bright White Daylight

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit [www.lightingfacts.com](http://www.lightingfacts.com) for the Label Reference Guide.

Registration Number: F4QJ-L8AVT (7/27/2015)  
Model Number: P406TAT MH4LED15D930E E4DCMW  
Type: Luminaire - Downlight

**LED lighting facts®**  
A Program of the U.S. DOE

Light Output (Lumens) **698**  
Watts **13**  
Lumens per Watt (Efficacy) **53.74**

Color Accuracy  
Color Rendering Index (CRI) **97**

Light Color  
Correlated Color Temperature (CCT) **2953 (Warm White)**

2700K 3000K 4500K 6500K

Warm White Bright White Daylight

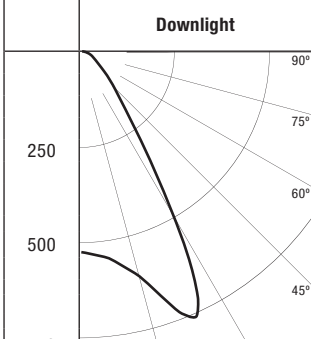
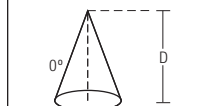
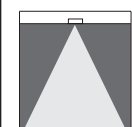
All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit [www.lightingfacts.com](http://www.lightingfacts.com) for the Label Reference Guide.

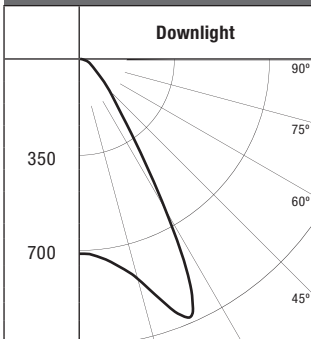
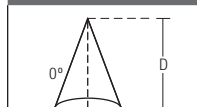
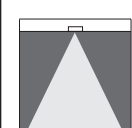
Registration Number: F4QJ-PY16RH (7/30/2015)  
Model Number: P406TAT MH4LED15A930E E4DCMW  
Type: Luminaire - Downlight



## PHOTOMETRICS

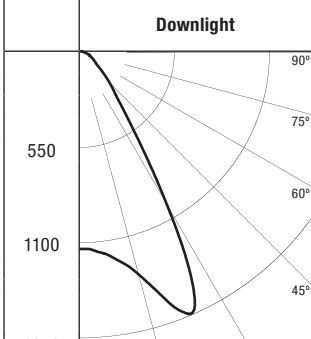
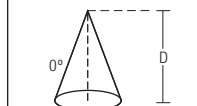
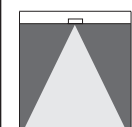
| Test Number P128321                                                               |                      | CANDLEPOWER DISTRIBUTION                                                          |  | CONE OF LIGHT                                                                      |     | CANDELA TABLE    |         | ZONAL LUMEN SUMMARY |        |          |
|-----------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------|-----|------------------|---------|---------------------|--------|----------|
| Platform                                                                          | P406TAT              |  |  |  |     | Degrees Vertical | Candela | Zone                | Lumens | %Fixture |
| Element                                                                           | MH4LED15V930E E4DCMW |                                                                                   |  |                                                                                    |     | 0                | 527     | 0-30                | 488    | 59.3     |
| Lumens                                                                            | 822                  |                                                                                   |  | 5                                                                                  | 536 | 0-40             | 643     | 78.1                |        |          |
| Efficacy                                                                          | 57.1 Lm/W            |                                                                                   |  | 15                                                                                 | 618 |                  |         |                     |        |          |
| SC                                                                                | 1.19                 |                                                                                   |  | 25                                                                                 | 728 | 35               | 242     | 0-60                | 764    | 92.9     |
|  |                      |                                                                                   |  | 45                                                                                 | 107 | 55               | 53      | 0-90                | 822    | 100      |
|                                                                                   |                      |                                                                                   |  | 65                                                                                 | 34  | 90-180           | 0       | 0                   |        |          |
|                                                                                   |                      |                                                                                   |  | 75                                                                                 | 18  |                  |         |                     |        |          |
|                                                                                   |                      |                                                                                   |  | 85                                                                                 | 5   | 0-180            | 822     | 100                 |        |          |
|                                                                                   |                      |                                                                                   |  | 90                                                                                 | 0   |                  |         |                     |        |          |
|                                                                                   |                      |                                                                                   |  |                                                                                    |     |                  |         |                     |        |          |

| COEFFICIENTS OF UTILIZATION |                                                |     |     |     |     |     |     |     |     |  |
|-----------------------------|------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ceiling<br>Wall %<br>RCR    | 80%                                            |     |     |     | 70% |     |     |     | 50% |  |
|                             | 70                                             | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 10  |  |
|                             | Zonal cavity method -- floor reflectance = 20% |     |     |     |     |     |     |     |     |  |
| 0                           | 119                                            | 119 | 119 | 119 | 116 | 116 | 116 | 111 | 111 |  |
| 1                           | 112                                            | 108 | 105 | 102 | 106 | 103 | 101 | 102 | 98  |  |
| 2                           | 105                                            | 99  | 94  | 90  | 97  | 92  | 89  | 94  | 87  |  |
| 3                           | 98                                             | 91  | 85  | 80  | 89  | 84  | 79  | 86  | 78  |  |
| 4                           | 92                                             | 83  | 77  | 72  | 82  | 76  | 71  | 80  | 70  |  |
| 5                           | 87                                             | 77  | 70  | 65  | 76  | 70  | 65  | 74  | 64  |  |
| 6                           | 82                                             | 72  | 65  | 60  | 71  | 64  | 60  | 69  | 59  |  |
| 7                           | 78                                             | 67  | 60  | 55  | 66  | 60  | 55  | 65  | 55  |  |
| 8                           | 73                                             | 63  | 56  | 51  | 62  | 56  | 51  | 61  | 51  |  |
| 9                           | 70                                             | 59  | 52  | 48  | 58  | 52  | 48  | 57  | 47  |  |
| 10                          | 66                                             | 55  | 49  | 45  | 55  | 49  | 45  | 54  | 44  |  |

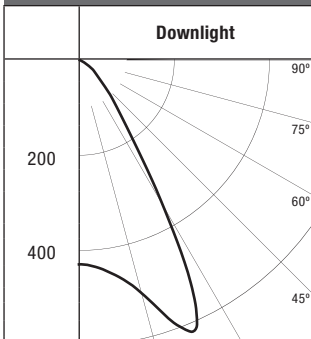
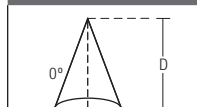
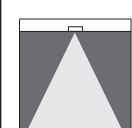
| Test Number P128655                                                                 |                      | CANDLEPOWER DISTRIBUTION                                                            |  | CONE OF LIGHT                                                                        |  | CANDELA TABLE                                                                                                                                                                                                                                                                                                                                                                                                            |  | ZONAL LUMEN SUMMARY |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
|-------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------|---------|---|-----|---|-----|----|-----|----|-----|----|-----|----|-----|----|----|----|----|----|----|----|---|----|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|------|--------|----------|------|-----|------|------|-----|------|------|------|------|------|------|-----|--------|---|---|-------|------|-----|
| Platform                                                                            | P406TAT              |  |  |  |  | <table><tr><th>Degrees Vertical</th><th>Candela</th></tr><tr><td>0</td><td>715</td></tr><tr><td>5</td><td>727</td></tr><tr><td>15</td><td>838</td></tr><tr><td>25</td><td>988</td></tr><tr><td>35</td><td>328</td></tr><tr><td>45</td><td>145</td></tr><tr><td>55</td><td>72</td></tr><tr><td>65</td><td>46</td></tr><tr><td>75</td><td>24</td></tr><tr><td>85</td><td>7</td></tr><tr><td>90</td><td>0</td></tr></table> |  | Degrees Vertical    | Candela | 0 | 715 | 5 | 727 | 15 | 838 | 25 | 988 | 35 | 328 | 45 | 145 | 55 | 72 | 65 | 46 | 75 | 24 | 85 | 7 | 90 | 0 | <table><tr><th>Zone</th><th>Lumens</th><th>%Fixture</th></tr><tr><td>0-30</td><td>662</td><td>59.3</td></tr><tr><td>0-40</td><td>872</td><td>78.1</td></tr><tr><td>0-60</td><td>1037</td><td>92.9</td></tr><tr><td>0-90</td><td>1116</td><td>100</td></tr><tr><td>90-180</td><td>0</td><td>0</td></tr><tr><td>0-180</td><td>1116</td><td>100</td></tr></table> |  |  | Zone | Lumens | %Fixture | 0-30 | 662 | 59.3 | 0-40 | 872 | 78.1 | 0-60 | 1037 | 92.9 | 0-90 | 1116 | 100 | 90-180 | 0 | 0 | 0-180 | 1116 | 100 |
| Degrees Vertical                                                                    | Candela              |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0                                                                                   | 715                  |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 5                                                                                   | 727                  |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 15                                                                                  | 838                  |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 25                                                                                  | 988                  |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 35                                                                                  | 328                  |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 45                                                                                  | 145                  |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 55                                                                                  | 72                   |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 65                                                                                  | 46                   |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 75                                                                                  | 24                   |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 85                                                                                  | 7                    |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 90                                                                                  | 0                    |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| Zone                                                                                | Lumens               | %Fixture                                                                            |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0-30                                                                                | 662                  | 59.3                                                                                |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0-40                                                                                | 872                  | 78.1                                                                                |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0-60                                                                                | 1037                 | 92.9                                                                                |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0-90                                                                                | 1116                 | 100                                                                                 |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 90-180                                                                              | 0                    | 0                                                                                   |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0-180                                                                               | 1116                 | 100                                                                                 |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| Element                                                                             | MH4LED20V930E E4DCMW |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| Lumens                                                                              | 1116                 |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| Efficacy                                                                            | 52.4 Lm/W            |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
| SC                                                                                  | 1.19                 |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |
|  |                      |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                     |         |   |     |   |     |    |     |    |     |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                |  |  |      |        |          |      |     |      |      |     |      |      |      |      |      |      |     |        |   |   |       |      |     |

| COEFFICIENTS OF UTILIZATION |                                                |     |     |     |     |     |     |     |     |  |
|-----------------------------|------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ceiling<br>Wall %<br>RCR    | 80%                                            |     |     |     | 70% |     |     |     | 50% |  |
|                             | 70                                             | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 10  |  |
|                             | Zonal cavity method -- floor reflectance = 20% |     |     |     |     |     |     |     |     |  |
| 0                           | 119                                            | 119 | 119 | 119 | 116 | 116 | 116 | 111 | 111 |  |
| 1                           | 112                                            | 108 | 105 | 102 | 106 | 103 | 101 | 102 | 98  |  |
| 2                           | 105                                            | 99  | 94  | 90  | 97  | 92  | 89  | 94  | 87  |  |
| 3                           | 98                                             | 91  | 85  | 80  | 89  | 84  | 79  | 86  | 78  |  |
| 4                           | 92                                             | 83  | 77  | 72  | 82  | 76  | 71  | 80  | 70  |  |
| 5                           | 87                                             | 77  | 70  | 65  | 76  | 70  | 65  | 74  | 64  |  |
| 6                           | 82                                             | 72  | 65  | 60  | 71  | 64  | 60  | 69  | 59  |  |
| 7                           | 78                                             | 67  | 60  | 55  | 66  | 60  | 55  | 65  | 55  |  |
| 8                           | 73                                             | 63  | 56  | 51  | 62  | 56  | 51  | 61  | 51  |  |
| 9                           | 70                                             | 59  | 52  | 48  | 58  | 52  | 48  | 57  | 47  |  |
| 10                          | 66                                             | 55  | 49  | 45  | 55  | 49  | 45  | 54  | 44  |  |

## PHOTOMETRICS

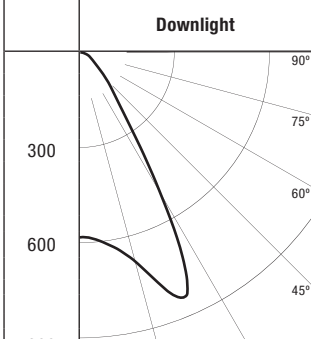
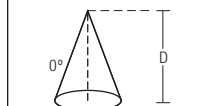
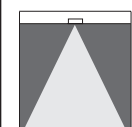
| Test Number P167732                                                               |                         | CANDLEPOWER DISTRIBUTION                                                          |      | CONE OF LIGHT                                                                                                                                                                                                                                                                                                                                                                                                            |  | CANDELA TABLE |    | ZONAL LUMEN SUMMARY |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
|-----------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------|----|---------------------|---|------|------|-----|-----|----|------|---|---|----|------|-----|-----|----|----|------|------|-----|------|------|------|-----|---|------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------|---------|---|------|---|------|----|------|----|------|----|-----|----|-----|----|-----|----|----|----|----|----|----|----|---|--|--|--|
| Platform                                                                          | P406TAT                 |  |      |                                                                                                                                                                                                                                                                                                                                        |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| Element                                                                           | MH4LED33V9301ELTEE4DCMW |                                                                                   |      | <table><tr><th>D</th><th>FC</th><th>L</th><th>W</th></tr><tr><td>5.5'</td><td>42.8</td><td>6.2</td><td>6.2</td></tr><tr><td>7'</td><td>26.4</td><td>8</td><td>8</td></tr><tr><td>8'</td><td>20.2</td><td>9.2</td><td>9.2</td></tr><tr><td>9'</td><td>16</td><td>10.2</td><td>10.4</td></tr><tr><td>10'</td><td>12.9</td><td>11.4</td><td>11.4</td></tr><tr><td>12'</td><td>9</td><td>13.8</td><td>13.8</td></tr></table> |  | D             | FC | L                   | W | 5.5' | 42.8 | 6.2 | 6.2 | 7' | 26.4 | 8 | 8 | 8' | 20.2 | 9.2 | 9.2 | 9' | 16 | 10.2 | 10.4 | 10' | 12.9 | 11.4 | 11.4 | 12' | 9 | 13.8 | 13.8 | <table><tr><th>Degrees Vertical</th><th>Candela</th></tr><tr><td>0</td><td>1142</td></tr><tr><td>5</td><td>1162</td></tr><tr><td>15</td><td>1339</td></tr><tr><td>25</td><td>1578</td></tr><tr><td>35</td><td>523</td></tr><tr><td>45</td><td>231</td></tr><tr><td>55</td><td>115</td></tr><tr><td>65</td><td>73</td></tr><tr><td>75</td><td>38</td></tr><tr><td>85</td><td>11</td></tr><tr><td>90</td><td>0</td></tr></table> |  | Degrees Vertical | Candela | 0 | 1142 | 5 | 1162 | 15 | 1339 | 25 | 1578 | 35 | 523 | 45 | 231 | 55 | 115 | 65 | 73 | 75 | 38 | 85 | 11 | 90 | 0 |  |  |  |
| D                                                                                 | FC                      | L                                                                                 | W    |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 5.5'                                                                              | 42.8                    | 6.2                                                                               | 6.2  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 7'                                                                                | 26.4                    | 8                                                                                 | 8    |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 8'                                                                                | 20.2                    | 9.2                                                                               | 9.2  |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 9'                                                                                | 16                      | 10.2                                                                              | 10.4 |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 10'                                                                               | 12.9                    | 11.4                                                                              | 11.4 |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 12'                                                                               | 9                       | 13.8                                                                              | 13.8 |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| Degrees Vertical                                                                  | Candela                 |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 0                                                                                 | 1142                    |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 5                                                                                 | 1162                    |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 15                                                                                | 1339                    |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 25                                                                                | 1578                    |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 35                                                                                | 523                     |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 45                                                                                | 231                     |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 55                                                                                | 115                     |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 65                                                                                | 73                      |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 75                                                                                | 38                      |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 85                                                                                | 11                      |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| 90                                                                                | 0                       |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| Lumens                                                                            | 1781                    |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| Efficacy                                                                          | 48.6 Lm/W               |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
| SC                                                                                | 1.19                    |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |
|  |                         |                                                                                   |      |                                                                                                                                                                                                                                                                                                                                                                                                                          |  |               |    |                     |   |      |      |     |     |    |      |   |   |    |      |     |     |    |    |      |      |     |      |      |      |     |   |      |      |                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                  |         |   |      |   |      |    |      |    |      |    |     |    |     |    |     |    |    |    |    |    |    |    |   |  |  |  |

| COEFFICIENTS OF UTILIZATION |                                                |     |     |     |     |     |     |     |     |  |
|-----------------------------|------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ceiling<br>Wall %<br>RCR    | 80%                                            |     |     |     | 70% |     |     |     | 50% |  |
|                             | 70                                             | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 10  |  |
|                             | Zonal cavity method -- floor reflectance = 20% |     |     |     |     |     |     |     |     |  |
| 0                           | 119                                            | 119 | 119 | 119 | 116 | 116 | 116 | 111 | 111 |  |
| 1                           | 112                                            | 108 | 105 | 102 | 106 | 103 | 101 | 102 | 98  |  |
| 2                           | 105                                            | 99  | 94  | 90  | 97  | 92  | 89  | 94  | 87  |  |
| 3                           | 98                                             | 91  | 85  | 80  | 89  | 84  | 79  | 86  | 78  |  |
| 4                           | 92                                             | 83  | 77  | 72  | 82  | 76  | 71  | 80  | 70  |  |
| 5                           | 87                                             | 77  | 70  | 65  | 76  | 70  | 65  | 74  | 64  |  |
| 6                           | 82                                             | 72  | 65  | 60  | 71  | 64  | 60  | 69  | 59  |  |
| 7                           | 78                                             | 67  | 60  | 55  | 66  | 60  | 55  | 65  | 55  |  |
| 8                           | 73                                             | 63  | 56  | 51  | 62  | 56  | 51  | 61  | 51  |  |
| 9                           | 70                                             | 59  | 52  | 48  | 58  | 52  | 48  | 57  | 47  |  |
| 10                          | 66                                             | 55  | 49  | 45  | 55  | 49  | 45  | 54  | 44  |  |

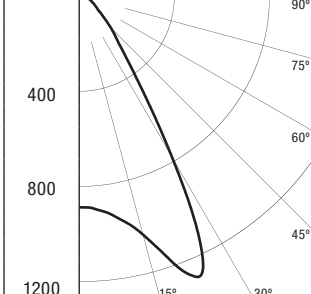
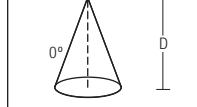
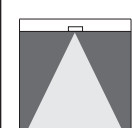
| Test Number P128325                                                                 |                      | CANDLEPOWER DISTRIBUTION                                                            |  | CONE OF LIGHT                                                                        |     | CANDELA TABLE    |         | ZONAL LUMEN SUMMARY |        |          |
|-------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|-----|------------------|---------|---------------------|--------|----------|
| Platform                                                                            | P406TAT              |  |  |  |     | Degrees Vertical | Candela | Zone                | Lumens | %Fixture |
| Element                                                                             | MH4LED15D930E E4DCMW |                                                                                     |  |                                                                                      |     | 0                | 431     | 0-30                | 399    | 59.3     |
| Lumens                                                                              | 672                  |                                                                                     |  |                                                                                      |     | 5                | 438     | 0-40                | 525    | 78.1     |
| Efficacy                                                                            | 46.7 Lm/W            |                                                                                     |  |                                                                                      |     | 15               | 505     | 0-60                | 625    | 92.9     |
| SC                                                                                  | 1.19                 |                                                                                     |  | 25                                                                                   | 595 | 35               | 197     | 0-90                | 672    | 100      |
|  |                      |                                                                                     |  | 45                                                                                   | 87  | 55               | 43      | 90-180              | 0      | 0        |
|                                                                                     |                      |                                                                                     |  | 65                                                                                   | 28  | 75               | 14      | 0-180               | 672    | 100      |
|                                                                                     |                      |                                                                                     |  | 75                                                                                   | 14  | 85               | 4       |                     |        |          |
|                                                                                     |                      |                                                                                     |  | 85                                                                                   | 4   | 90               | 0       |                     |        |          |
|                                                                                     |                      |                                                                                     |  |                                                                                      |     |                  |         |                     |        |          |
|                                                                                     |                      |                                                                                     |  |                                                                                      |     |                  |         |                     |        |          |

| COEFFICIENTS OF UTILIZATION |                                                |     |     |     |     |     |     |     |     |  |
|-----------------------------|------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ceiling<br>Wall %<br>RCR    | 80%                                            |     |     |     | 70% |     |     |     | 50% |  |
|                             | 70                                             | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 10  |  |
|                             | Zonal cavity method -- floor reflectance = 20% |     |     |     |     |     |     |     |     |  |
| 0                           | 119                                            | 119 | 119 | 119 | 116 | 116 | 116 | 111 | 111 |  |
| 1                           | 112                                            | 108 | 105 | 102 | 106 | 103 | 101 | 102 | 98  |  |
| 2                           | 105                                            | 99  | 94  | 90  | 97  | 92  | 89  | 94  | 87  |  |
| 3                           | 98                                             | 91  | 85  | 80  | 89  | 84  | 79  | 86  | 78  |  |
| 4                           | 92                                             | 83  | 77  | 72  | 82  | 76  | 71  | 80  | 70  |  |
| 5                           | 87                                             | 77  | 70  | 65  | 76  | 70  | 65  | 74  | 64  |  |
| 6                           | 82                                             | 72  | 65  | 60  | 71  | 64  | 60  | 69  | 59  |  |
| 7                           | 78                                             | 67  | 60  | 55  | 66  | 60  | 55  | 65  | 55  |  |
| 8                           | 73                                             | 63  | 56  | 51  | 62  | 56  | 51  | 61  | 51  |  |
| 9                           | 70                                             | 59  | 52  | 48  | 58  | 52  | 48  | 57  | 47  |  |
| 10                          | 66                                             | 55  | 49  | 45  | 55  | 49  | 45  | 54  | 44  |  |

## PHOTOMETRICS

| Test Number P128659                                                               |                      | CANDLEPOWER DISTRIBUTION                                                          |  | CONE OF LIGHT                                                                      |     | CANDELA TABLE    |         | ZONAL LUMEN SUMMARY |        |          |
|-----------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------|-----|------------------|---------|---------------------|--------|----------|
| Platform                                                                          | P406TAT              |  |  |  |     | Degrees Vertical | Canдела | Zone                | Lumens | %Fixture |
| Element                                                                           | MH4LED20D930E E4DCMW |                                                                                   |  |                                                                                    |     | 0                | 585     | 0-30                | 541    | 59.3     |
| Lumens                                                                            | 912                  |                                                                                   |  |                                                                                    |     | 5                | 594     | 0-40                | 712    | 78.1     |
| Efficacy                                                                          | 42.8 Lm/W            |                                                                                   |  |                                                                                    |     | 15               | 685     | 0-60                | 847    | 92.9     |
| SC                                                                                | 1.19                 |                                                                                   |  | 25                                                                                 | 808 | 35               | 268     | 0-90                | 912    | 100      |
|  |                      |                                                                                   |  | 45                                                                                 | 118 | 55               | 59      | 90-180              | 0      | 0        |
|                                                                                   |                      |                                                                                   |  | 65                                                                                 | 38  | 75               | 20      | 0-180               | 912    | 100      |
|                                                                                   |                      |                                                                                   |  | 85                                                                                 | 6   | 90               | 0       |                     |        |          |
|                                                                                   |                      |                                                                                   |  |                                                                                    |     |                  |         |                     |        |          |
|                                                                                   |                      |                                                                                   |  |                                                                                    |     |                  |         |                     |        |          |
|                                                                                   |                      |                                                                                   |  |                                                                                    |     |                  |         |                     |        |          |

| COEFFICIENTS OF UTILIZATION |                                                |     |     |     |     |     |     |     |     |  |
|-----------------------------|------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ceiling<br>Wall %<br>RCR    | 80%                                            |     |     |     | 70% |     |     |     | 50% |  |
|                             | 70                                             | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 10  |  |
|                             | Zonal cavity method -- floor reflectance = 20% |     |     |     |     |     |     |     |     |  |
| 0                           | 119                                            | 119 | 119 | 119 | 116 | 116 | 116 | 111 | 111 |  |
| 1                           | 112                                            | 108 | 105 | 102 | 106 | 103 | 101 | 102 | 98  |  |
| 2                           | 105                                            | 99  | 94  | 90  | 97  | 92  | 89  | 94  | 87  |  |
| 3                           | 98                                             | 91  | 85  | 80  | 89  | 84  | 79  | 86  | 78  |  |
| 4                           | 92                                             | 83  | 77  | 72  | 82  | 76  | 71  | 80  | 70  |  |
| 5                           | 87                                             | 77  | 70  | 65  | 76  | 70  | 65  | 74  | 64  |  |
| 6                           | 82                                             | 72  | 65  | 60  | 71  | 64  | 60  | 69  | 59  |  |
| 7                           | 78                                             | 67  | 60  | 55  | 66  | 60  | 55  | 65  | 55  |  |
| 8                           | 73                                             | 63  | 56  | 51  | 62  | 56  | 51  | 61  | 51  |  |
| 9                           | 70                                             | 59  | 52  | 48  | 58  | 52  | 48  | 57  | 47  |  |
| 10                          | 66                                             | 55  | 49  | 45  | 55  | 49  | 45  | 54  | 44  |  |

| Test Number P167736                                                                 |                         | CANDLEPOWER DISTRIBUTION                                                            |  | CONE OF LIGHT                                                                        |  | CANDELA TABLE                                                                                                                                                                                                                                                                                                                                                                                                              |  | ZONAL LUMEN SUMMARY |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
|-------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------|---------|---|-----|---|-----|----|------|----|------|----|-----|----|-----|----|----|----|----|----|----|----|---|----|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|------|--------|----------|------|-----|------|------|------|------|------|------|------|------|------|-----|--------|---|---|-------|------|-----|
| Platform                                                                            | P406TAT                 |  |  |  |  | <table><tr><th>Degrees Vertical</th><th>Canдела</th></tr><tr><td>0</td><td>898</td></tr><tr><td>5</td><td>913</td></tr><tr><td>15</td><td>1052</td></tr><tr><td>25</td><td>1240</td></tr><tr><td>35</td><td>411</td></tr><tr><td>45</td><td>182</td></tr><tr><td>55</td><td>90</td></tr><tr><td>65</td><td>58</td></tr><tr><td>75</td><td>30</td></tr><tr><td>85</td><td>9</td></tr><tr><td>90</td><td>0</td></tr></table> |  | Degrees Vertical    | Canдела | 0 | 898 | 5 | 913 | 15 | 1052 | 25 | 1240 | 35 | 411 | 45 | 182 | 55 | 90 | 65 | 58 | 75 | 30 | 85 | 9 | 90 | 0 | <table><tr><th>Zone</th><th>Lumens</th><th>%Fixture</th></tr><tr><td>0-30</td><td>830</td><td>59.3</td></tr><tr><td>0-40</td><td>1094</td><td>78.1</td></tr><tr><td>0-60</td><td>1301</td><td>92.9</td></tr><tr><td>0-90</td><td>1400</td><td>100</td></tr><tr><td>90-180</td><td>0</td><td>0</td></tr><tr><td>0-180</td><td>1400</td><td>100</td></tr></table> |  |  | Zone | Lumens | %Fixture | 0-30 | 830 | 59.3 | 0-40 | 1094 | 78.1 | 0-60 | 1301 | 92.9 | 0-90 | 1400 | 100 | 90-180 | 0 | 0 | 0-180 | 1400 | 100 |
| Degrees Vertical                                                                    | Canдела                 |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0                                                                                   | 898                     |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 5                                                                                   | 913                     |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 15                                                                                  | 1052                    |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 25                                                                                  | 1240                    |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 35                                                                                  | 411                     |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 45                                                                                  | 182                     |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 55                                                                                  | 90                      |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 65                                                                                  | 58                      |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 75                                                                                  | 30                      |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 85                                                                                  | 9                       |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 90                                                                                  | 0                       |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| Zone                                                                                | Lumens                  | %Fixture                                                                            |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0-30                                                                                | 830                     | 59.3                                                                                |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0-40                                                                                | 1094                    | 78.1                                                                                |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0-60                                                                                | 1301                    | 92.9                                                                                |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0-90                                                                                | 1400                    | 100                                                                                 |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 90-180                                                                              | 0                       | 0                                                                                   |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| 0-180                                                                               | 1400                    | 100                                                                                 |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| Element                                                                             | MH4LED33D9301ELTEE4DCMW |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| Lumens                                                                              | 1400                    |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| Efficacy                                                                            | 38.2 Lm/W               |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
| SC                                                                                  | 1.19                    |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |
|  |                         |                                                                                     |  |                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                     |         |   |     |   |     |    |      |    |      |    |     |    |     |    |    |    |    |    |    |    |   |    |   |                                                                                                                                                                                                                                                                                                                                                                 |  |  |      |        |          |      |     |      |      |      |      |      |      |      |      |      |     |        |   |   |       |      |     |

| COEFFICIENTS OF UTILIZATION |                                                |     |     |     |     |     |     |     |     |  |
|-----------------------------|------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ceiling<br>Wall %<br>RCR    | 80%                                            |     |     |     | 70% |     |     |     | 50% |  |
|                             | 70                                             | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 10  |  |
|                             | Zonal cavity method -- floor reflectance = 20% |     |     |     |     |     |     |     |     |  |
| 0                           | 119                                            | 119 | 119 | 119 | 116 | 116 | 116 | 111 | 111 |  |
| 1                           | 112                                            | 108 | 105 | 102 | 106 | 103 | 101 | 102 | 98  |  |
| 2                           | 105                                            | 99  | 94  | 90  | 97  | 92  | 89  | 94  | 87  |  |
| 3                           | 98                                             | 91  | 85  | 80  | 89  | 84  | 79  | 86  | 78  |  |
| 4                           | 92                                             | 83  | 77  | 72  | 82  | 76  | 71  | 80  | 70  |  |
| 5                           | 87                                             | 77  | 70  | 65  | 76  | 70  | 65  | 74  | 64  |  |
| 6                           | 82                                             | 72  | 65  | 60  | 71  | 64  | 60  | 69  | 59  |  |
| 7                           | 78                                             | 67  | 60  | 55  | 66  | 60  | 55  | 65  | 55  |  |
| 8                           | 73                                             | 63  | 56  | 51  | 62  | 56  | 51  | 61  | 51  |  |
| 9                           | 70                                             | 59  | 52  | 48  | 58  | 52  | 48  | 57  | 47  |  |
| 10                          | 66                                             | 55  | 49  | 45  | 55  | 49  | 45  | 54  | 44  |  |