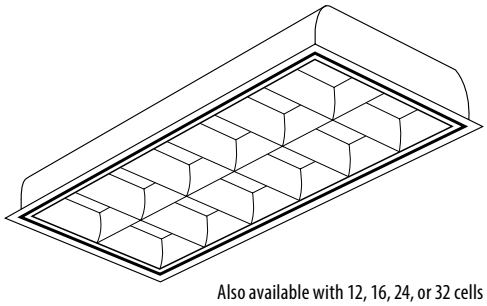
Columbia LIGHTING

P4D24

2' × 4' DuraLouver® Parabolic / 2, 3, or 4-Lamp T5, T5HO, T8



Also available with 12, 16, 24, or 32 cells

FEATURES

- Nominal 3" deep louver
- Fluorescent, energy efficient light source
- Black reveal with full air handling capabilities
- Matte anodized low iridescent, semi-specular (MA) louver finish virtually eliminates visibility of fingerprints and construction dust
- Shallow housing height
- Lightweight
- Recessed, surface or cable mount
- UL Listed 1598
- Available with exclusive wiHUBB technology preinstalled
  – Peer to peer, self-healing wireless mesh network
  – Integrated control system for 0-10VDC or On/Off

PROJECT INFORMATION

Project Name _____ **Type** _____

Catalog No. _____ **Date** _____

CONSTRUCTION
Luminaire housing and end caps are die formed code gauge cold rolled steel. Louver is formed from DuraLouver® anodized aluminum and secured in open or closed position by die formed steel hinges. Louver hinges from either side. Mechanical light trap prevents light leaks. Latches are finger-tip actuated, positive feed type, fabricated of spring steel, and completely concealed in the black reveal.

FINISH
Parts are treated with a five stage phosphate bonding process and finished with a high temperature baked white enamel. For post painted housing, suffix catalog number with PAF. Regressed slots are flat black. Anodized aluminum DuraLouver standard finish is matte anodized low iridescent (MA). Also available low-iridescent specular aluminum (LS).

AIR HANDLING
All supply/return and air extract functions are available as a specified option. Directional control vanes and/or extract damper features available. Air extract slots are located out of sight in end caps. See air removal data on reverse.

INSTALLATION
An access plate is furnished with each luminaire for fast wiring access from the plenum. No need to open fixture. Product ships standard with mylar dust cover to eliminate job site contamination.

BALLASTS
Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, magnetic or electronic ballasts. CEE NEMA Premium compliant.

ELECTRICAL
Standard class "P", thermally protected, autoresetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

CEILING COMPATIBILITY
Designed for recessed installation in standard inverted tee grid ceilings (G), recessed installation in hard ceilings (G with FK accessory), Surface mount at ceiling plane (SM) or cable mount suspension below ceiling plane (CM). For compatibility with specific ceilings contact your Hubbell Lighting representative.

CERTIFICATION
All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION

EXAMPLE P4D24-232G-MA26-S-EU

P4D 24 – – – – – –

MODEL
- **P4D** DuraLouver Parabolic

SIZE
- **24** 2' × 4'

NO. OF LAMPS
- **2** Two
- **3** Three
- **4** Four

CEILING TYPE
- **G** Inverted T-bar[1]
- **SM** Surface Mount (static only)
- **CM** Cable Mount (static only)[2]

For hard ceilings use flange kit; see accessories.

NO. CELLS CROSSWISE
- **2** Two
- **3** Three
- **4** Four

NO. CELLS LENGTHWISE
- **6** Six
- **8** Eight

BALLAST
- **E** Electronic T8, Instant Start
- **3E** 3-Lamp Electronic T8, Instant Start
- **EP** Electronic T5 or T8, Programmed Start
- **3EP** 3-Lamp Electronic T5HO or T8, Programmed Start

For a specific ballast vendor show as option.

OPTIONS
- **GLR** Fast Blow Fuse
- **GMF** Slow Blow Fuse
- **EL** Emergency Battery Pack
- **F835** 35K 78+ CRI Full Wattage T8 Lamps Installed
- **F0835** 35K 82 CRI T8 Lamps Installed
- **F5835** 35K 85 CRI T5 Lamps Installed
- **C388** 3-Wire Flex
- **C488** 4-Wire Flex
- **TB** Two Bulk T-bar Clips
- **TB4** Four Bulk T-bar Clips
- **MS9** Master/Satellite w/9' Harness
- **PAF** Paint After Fabrication
- **NYC** NYC Compliant
- **NYCU** NYC Compliant, Union Label
- **WIH** wiHUBB Enabled[5,6]
- **EOR** End of Row (SM/CM only.)[7]
- **INT** Intermediate (SM/CM only.)[7]

ACCESSORIES
- **FK24** 2' × 4' Single Flange Kit
- **FKCR** Flange Kit Row Adapter Brackets
- **CM48Y2SC3F-KIT** 48" Cable Mount Kit for 2' Wide CM Trim Fixtures, 3 Wire Feed Cord

LAMP TYPE
- **28** 4', T5: 28 Watt
- **32** 4', T8: 32, 30, 28 or 25 Watt
- **54** 4', T5HO: 54 or 51 Watt

LOUVER FINISH
- **MA** Matte Anodized Low Iridescent Semi-Specular Aluminum (std.)
- **LS** Low Iridescent Specular Aluminum
- **LD** Low Iridescent Semi-Specular

AIR FUNCTIONS
- **S** Static[3]
- **A** Air Handling[3]
- **AV** Air Handling w/Supply Vanes[3]
- **C** Combination Supply/Extract[4]
- **CV** Combination Supply Vanes/ Extract[4]
- **CD** Combination Supply Extract Dampers[4]
- **CVD** Combination Supply Vanes Extract Dampers[4]
- **H** Heat Extract[4]
- **HD** Heat Extract w/Dampers[4]

VOLTAGE
- **U** 120V-277V
- **347** 347V

[1] For drywall order G ceiling type with FK flange kit accessories.
[2] Order hanger accessories separately.
[3] Fixtures supplied with integral T-bar clips.
[4] Fixtures supplied with two non-integral, screw-type T-bar clips.
[5] In-Fixture module antenna adds 2" to overall fixture height at powerfeed location.
[6] Not available with Surface Mount ceiling type.
[7] Provides end wiring access for continuous row. Contact Hubbell Lighting representative for continuous row 3-lamp fixtures.

Protected by US Patent 6,582,098.
Specifications subject to change without notice.

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PHOTOMETRIC DATA

Test **12454** Test Date **3/14/00**

LUMINAIRE DATA

Luminaire	**P4D24-232-MA26** **P4D, Parabolic** **2' X 4' 2 LAMP WITH 2X6 CELL MATTE ALUMINUM LOUVER**
Ballast	**B232I120RH**
Ballast Factor	**0.88**
Lamp	**F32T8**
Lumens per Lamp	**2900**
Watts	**56**
Shielding Angle	**0° = 20 90° = 29**
Spacing Criterion	**0° = 1.22 90° = 1.56**

ZONAL LUMEN SUMMARY

Zone	Lumens	Lamp	Fixt.
0-30	1214	20.9	27.7
0-40	2057	35.5	46.9
0-60	3934	67.8	89.8
0-90	4381	75.5	100.0
0-180	4381	75.5	100.0

ENERGY DATA

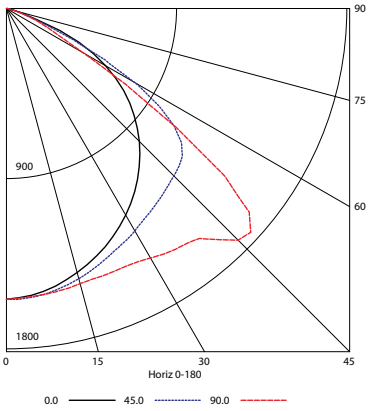
Total Luminaire Efficiency	**75.5%**
Luminaire Efficacy Rating (LER)	**69**
IESNA RP-1-1993 Compliance	**Noncompliant**
Comparative Yearly Lighting Energy Cost per 1000 Lumens	**$3.48 based on 3000 hrs. and $0.08 per KWH**

COEFFICIENTS OF UTILIZATION (%)

RCR	RC	80				70				50			0
	RW	70	50	30	10	70	50	30	10	50	30	10	0
	1	83	80	78	75	81	79	76	74	76	73	72	66
	2	77	71	66	63	75	70	65	62	67	63	60	56
	3	70	63	57	53	68	62	56	52	59	55	51	48
	4	64	56	49	45	62	55	49	44	53	48	44	41
	5	59	50	43	38	57	49	43	38	47	42	38	35
	6	54	45	38	33	53	44	38	33	43	37	33	31
	7	50	40	34	29	49	40	34	29	39	33	29	27
	8	47	37	30	26	46	36	30	26	35	30	26	24
	9	44	34	27	23	42	33	27	23	32	27	23	21
	10	41	31	25	21	40	30	25	21	30	24	21	19

RCR = Room Cavity Ratio
RC = Effective Ceiling Cavity Reflectance **RW** = Wall Reflectance

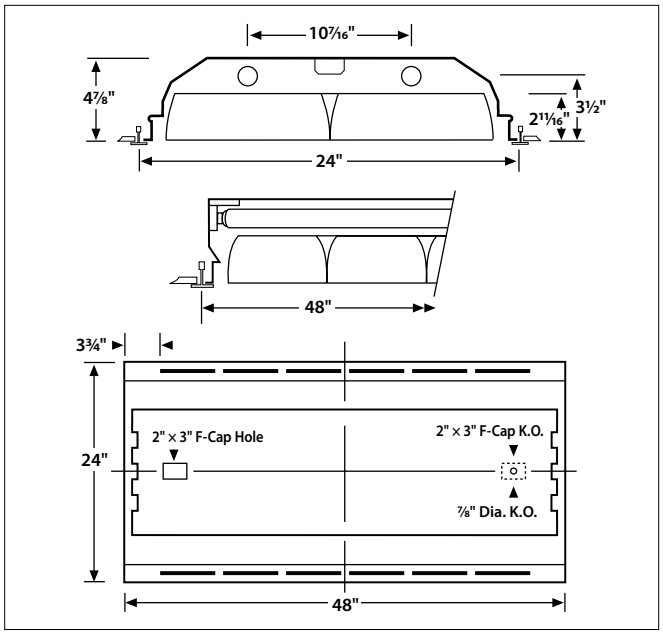
INDOOR CANDELA PLOT



AVG. LUMINANCE (Candela/Sq. M.)

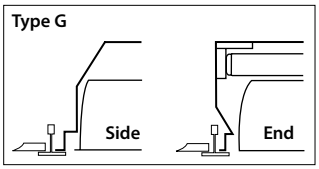
Average Luminance Angle	0.0	22.5	45.0	67.5	90.0
0	2535	2535	2535	2535	2535
30	2402	2446	2587	2785	2901
40	2352	2448	2765	3170	3418
45	2317	2466	2919	3567	4038
50	2264	2479	3116	3886	4299
55	2174	2473	3109	3328	3152
60	1999	2336	2590	1871	1541
65	1647	1866	1518	976	952
70	839	965	695	613	617
75	363	351	325	312	280
80	219	209	171	162	152
85	151	132	114	114	95

DIMENSIONAL DATA

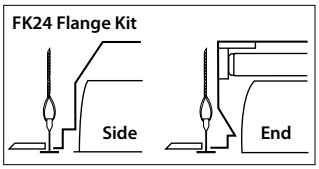


NOTE: All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

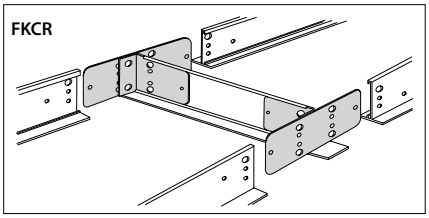
CEILING COMPATIBILITY



For lay-in installation in exposed grid ceilings. Maximum tee widths of 1" and maximum tee heights of 2" allowed.



For hard ceiling applications order FK24 flange kit. Flange kit wires directly into concealed ceiling opening for a clean, finished appearance.



For flanged fixtures in row configurations, the FKCR adapter bracket kit is required in addition to the FK24 kit. Order one less FKCR than the total number of fixtures in row. (Example: Row of two, order (2) FK24 & (1) FKCR)

Row cut out dimensions using FK24s & FKCR adapters:
Width 24⅜", Length [48" × (# in row)] + ⅜". Example: (48" × 2)+ ⅜" = 96⅜"

Flange kit rough in dimensions for single unit only: 24⅜" × 48⅜"

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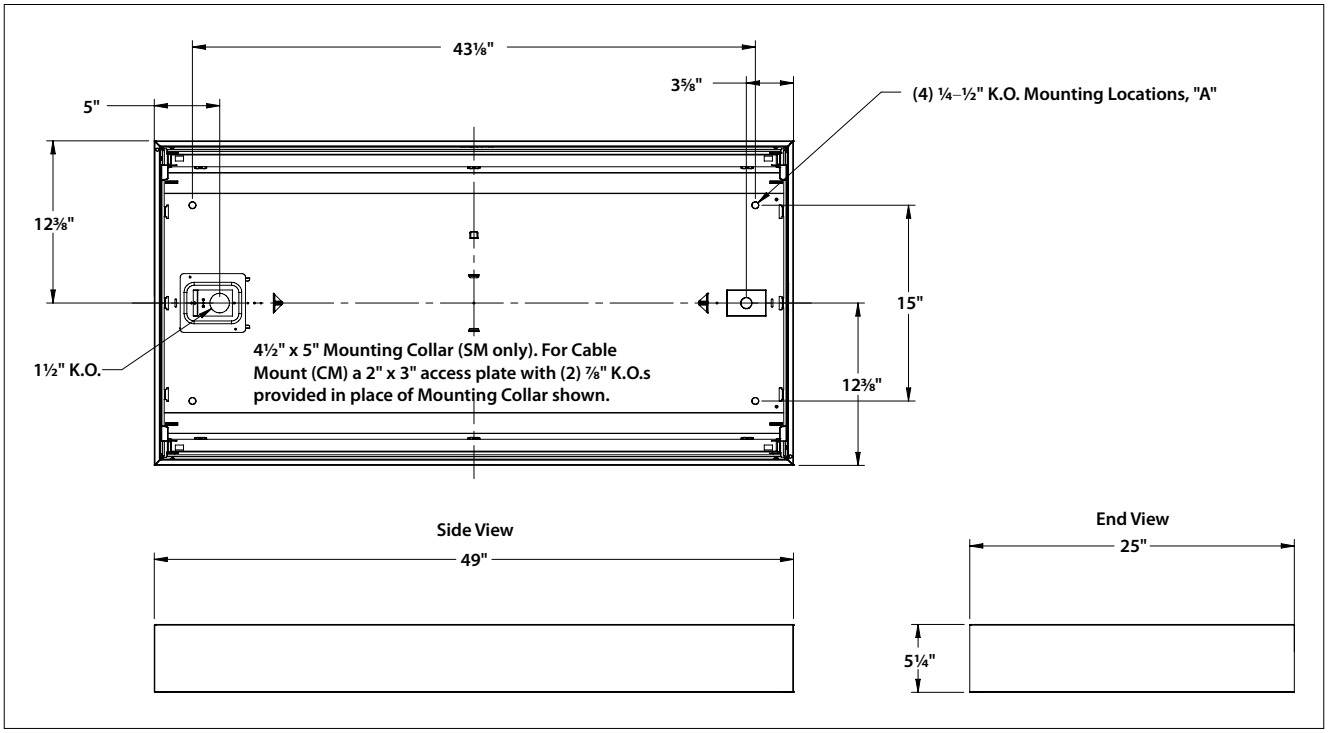
DIMENSIONAL DATA - SURFACE OR CABLE MOUNT



SURFACE MOUNT

Order SM ceiling type. Mounting collar required for surface mounting. (4) Mounting knock-outs, ¼" to ½" provided as shown, marked "A".

CABLE MOUNT

Order CM ceiling type**.** Access plate supplied for cable mounting or suspension. Use CM48Y2C3F-KIT 48" cable mount kit. Includes 3 wire feed cord. For other wiring needs, contact Hubbell Lighting representative. Mounting knock-outs, ¼" to ½", provided as shown, marked "A".

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