

# PHILIPS LIGHTOLIER

## Downlighting

### LyteCaster

6" Round downlight



Project: \_\_\_\_\_

Location: \_\_\_\_\_

Cat.No: \_\_\_\_\_

Type: \_\_\_\_\_

Lamps: \_\_\_\_\_ Qty: \_\_\_\_\_

Notes: \_\_\_\_\_

Philips Lightolier LyteCaster LED Downlights are ideal general purpose downlighting solution, providing comfortable, quality light. Available in new construction and remodeler frame with interchangeable light engine that is offered in two lumen packages. The downlight is wet location listed and comes in 3 standard option.

## Complete product = Frame-in kit + Light engine + Trim Order each separately

### Ordering guide: Frame-In kit

Example: L6RAE1VA

Series	Lumens <sup>1</sup>	Frame type	Dimming	Input voltage	Version
<b>L6R</b>					<b>VA</b>
L6R LyteCaster 6" Round	<b>blank</b> 1500 <b>20</b> 2000	<b>A</b> AirSeal IC, New Construction, Screw <b>AN</b> AirSeal IC, New Construction, Nail	<b>E</b> ELV dimming <b>Z10</b> 0-10V	<b>1</b> 120V <b>U</b> Universal	<b>VA</b> Version A <sup>2</sup>
	<b>15</b> 1500 <b>20</b> 2000	<b>R</b> AirSeal IC, Remodeler			

### Ordering guide: Light engine

Example: L6R15827VA

Series	Lumens <sup>1</sup>	CRI	CCT	Version
<b>L6R</b>				<b>VA</b>
L6R LyteCaster 6" Round	<b>15</b> 1500 <b>20</b> 2000	<b>8</b> 80  <b>9</b> 90	<b>27</b> 2700K <b>30</b> 3000K <b>35</b> 3500K <b>40</b> 4000K	<b>VA</b> Version A <sup>2</sup>
			<b>27</b> 2700K <b>30</b> 3000K	

**Note:** Lumen output is calculated based on 80 CRI and 3500K CCT. Please consult adjustment factors table on page 5 for other lumen outputs.

### Ordering guide: Trim

Example: L6RDW

Series	Luminaire type	Finish
<b>L6R</b>		
L6R LyteCaster 6" Round	<b>D</b> Open Downlight	<b>D</b> Clear diffuse (with white flange) <b>W</b> White (with white flange)
	<b>B</b> Baffle Downlight	<b>W</b> White (with white flange)

- When ordering a Frame-in kit and a Light engine, the lumen package code must match.
- Version A (VA) frames and light engines are not compatible with previous versions.

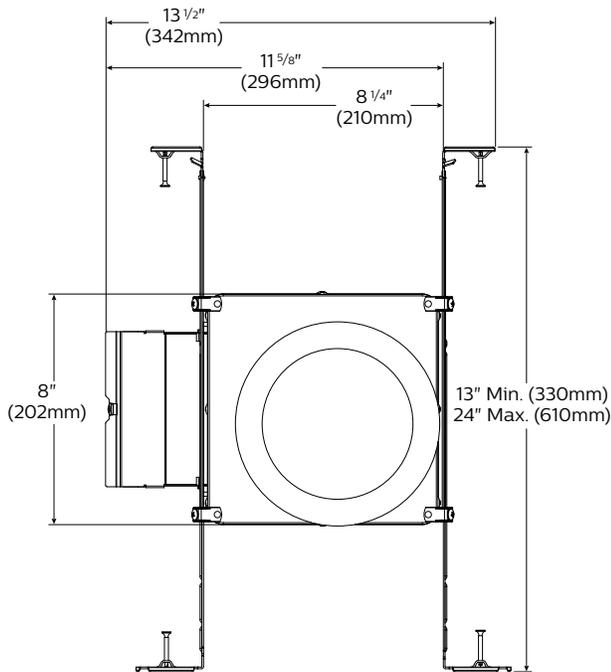


# L6R LyteCaster 6" Round

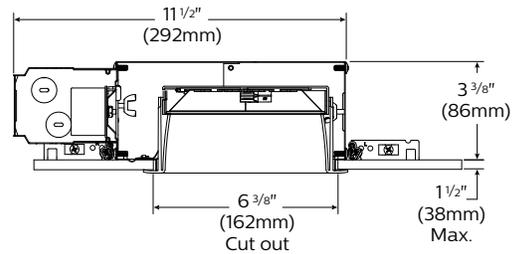
General purpose downlight

## New construction frame-in kit

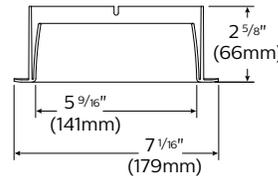
Bottom view



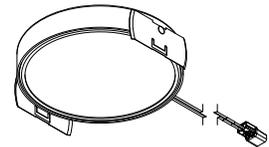
Side view



Downlight trim



Light engine



## Features

- Housing:** .026" galvanized steel. UL listed for direct contact with thermal insulation. Airseal® housing minimizes air leakage to less than 2 CFM at 1.57PSF (or 75PA), which complies with the International Energy Conservation Code, and Washington State Energy Code (Section 502.4). This reduces heat loss and condensation in ceiling. Access door for inspection of junction box.
- Lower frame and top cover:** .026" galvanized steel. Accommodates ceilings up to 1 1/2" (38mm) thick. 3/8" (9.5mm) deep integral lip with four notches at 90° apart to simplify alignment. Locks into position along length of mounting bars with locking screws.
- Junction Box:** 2.5" X 5 3/8" X 2" (27 cu. in) .032" galvanized steel. UL listed 90° supply conductors. Rated for branch circuit wiring supplying connected luminaires (daisy chaining).
- Retaining clips:** Permit easy and fast installation of light engine/trim.
- Mounting bars:** .059" galvanized steel. Bars pivot for easy attachment and wire-in below ceiling line. Bars extend to accommodate 16" (406mm) to 24" (610mm) O.C. joist spacing. Bars can accommodate 12" (305mm) O.C. joist spacing after a slight field modification (see Instruction sheet). Features integral self tapping phillips/square drive screws for secure attachment to wood or metal construction. Also available with integral nails. Attaches to T-bar ceilings without the need of accessories. Bars installed on shortest dimension of frame, but can be easily repositioned 90 degrees from original position.
- Driver: ELV:** 120V, 50/60Hz. RoHS compliant, Class 2 power supply. Complies with FCC rules per Title 47 Part 15 (Class B) for EMI/ RFI (conducted & radiated). Class A sound rating. **0-10V:** 120/277V, 50/60Hz. RoHS compliant, Class 2 power supply. Complies with FCC rules per Title 47 Part 15 (Class A) for EMI/ RFI (conducted & radiated). Class A sound rating.
- Ceiling cutout:** 6 3/8" (162mm).

## Electrical

**Lifetime:** Expected lifetime 50,000 hours and backed by a 5-year warranty. (see Philips.com/warranties for details)

## Recommended dimmers

See LED-DIM Specification Sheet.

## Labels

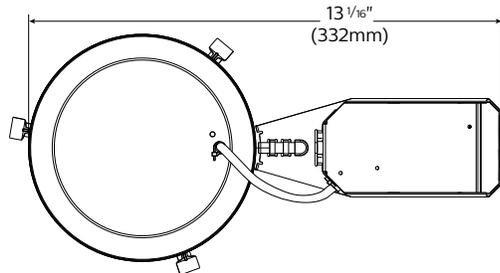
cULus Listed Type I.C. frames are suitable for damp location. Trims are cULus suitable for wet location (no shower lens unit required). Complies with Air Leakage. Energy Star certified.

# L6R LyteCaster 6" Round

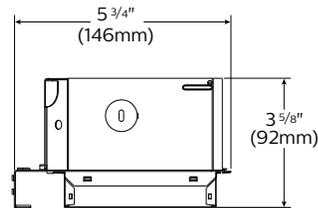
General purpose downlight

## Remodeler kit

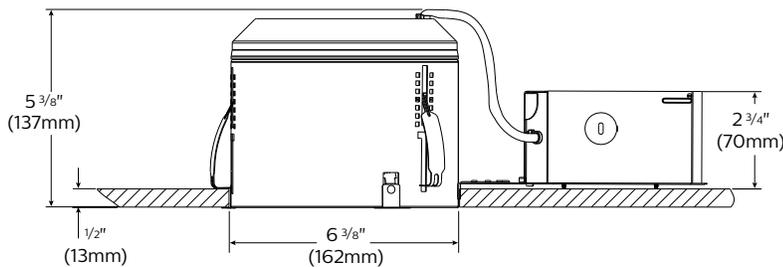
Bottom view



Side view



Side view



## Features

- Housing:** .032 Aluminum. UL listed for direct contact with thermal insulation. Integral retaining spring secures housing to ceilings up to 2" thick. Removable for access to junction box and ceiling plenum. 5 1/2" maximum for use in 2" x 6" joist construction and shallow plenum applications. Airseal® housing minimizes air leakage to less than 2 CFM at 1.57PSF (or 75PA), which complies with the International Energy Conservation Code, and Washington State Energy Code (Section 502.4). This reduces heat loss and condensation in ceiling.
- Junction Box:** 2 1/2" x 2 1/2" x 4 7/8" (29 cu in.) .031" galvanized steel. UL listed for 90°C supply conductors. Rated for branch circuit wiring supplying connected fixtures.
- Retaining clips:** Permit easy and fast installation of light engine/trim.
- Driver: ELV /Triac:** 120V, 50/60Hz. RoHS compliant, Class 2 power supply. Complies with FCC rules per Title 47 Part 15 (Class B) for EMI/RFI (conducted & radiated). Class A sound rating.  
**0-10V:** 120/277V, 50/60Hz. RoHS compliant, Class 2 power supply. Complies with FCC rules per Title 47 Part 15 (Class A) for EMI/RFI (conducted & radiated). Class A sound rating.
- Ceiling cutout:** 6 3/8" (162mm).

## Electrical

**Lifetime:** Expected lifetime 50,000 hours and backed by a 5-year warranty. (see Philips.com/warranties for details)

## Recommended dimmers

See LED-DIM Specification Sheet.

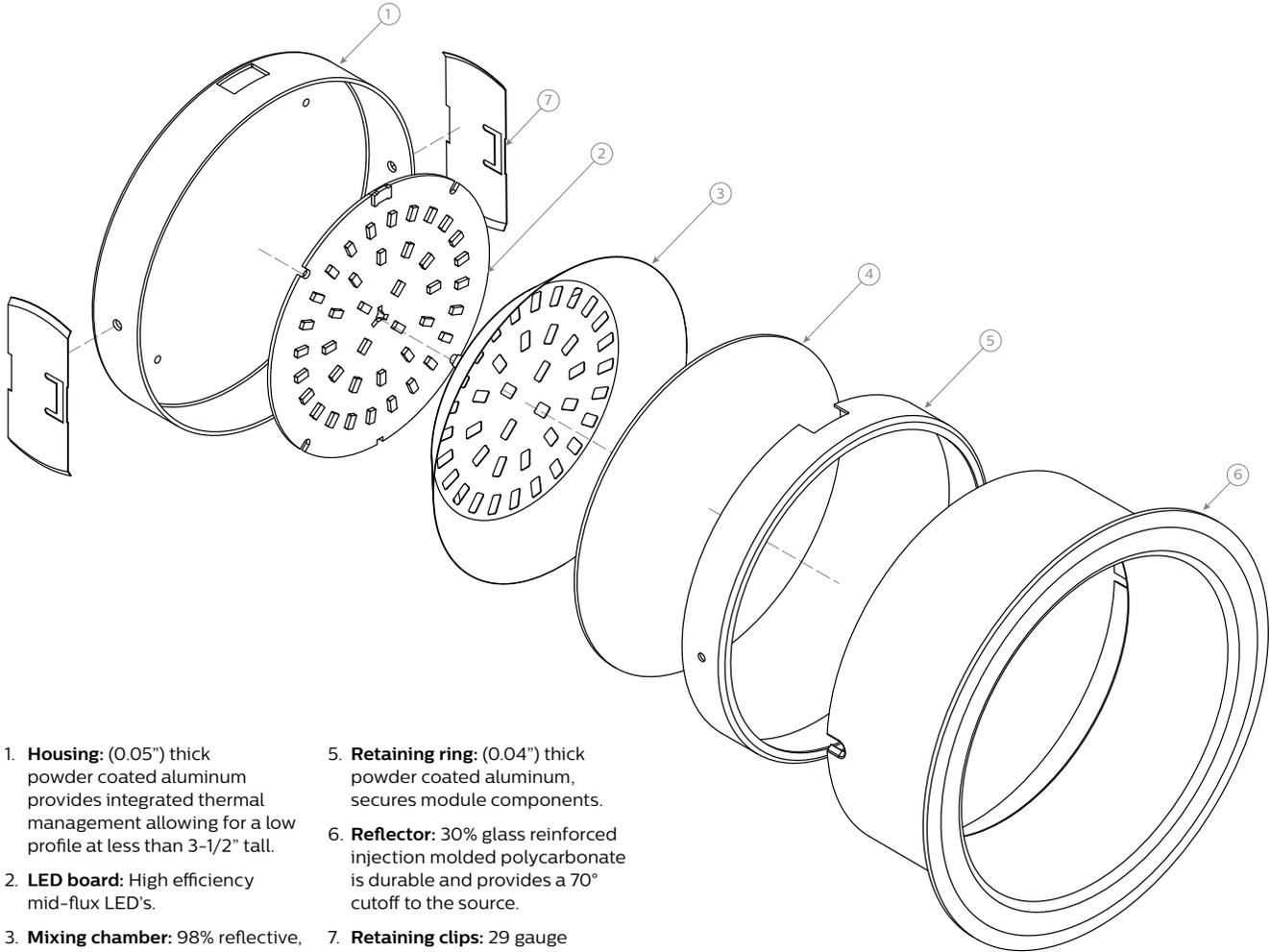
## Labels

cULus Listed Type I.C., frames are suitable for damp location. Trims are cULus suitable for wet location (no shower lens unit required). Complies with Air Leakage. Energy Star certified.

# L6R LyteCaster 6" Round

General purpose downlight

## Reflector: Round downlight



1. **Housing:** (0.05") thick powder coated aluminum provides integrated thermal management allowing for a low profile at less than 3-1/2" tall.
2. **LED board:** High efficiency mid-flux LED's.
3. **Mixing chamber:** 98% reflective, highly diffuse film.
4. **Diffusion lens:** (0.06") thick acrylic opal lens provides an even source of illumination.
5. **Retaining ring:** (0.04") thick powder coated aluminum, secures module components.
6. **Reflector:** 30% glass reinforced injection molded polycarbonate is durable and provides a 70° cutoff to the source.
7. **Retaining clips:** 29 gauge Stainless Steel, allows tool-less installation of light engine to trim.

## Electrical specifications

Frame-in kit / Remodeler

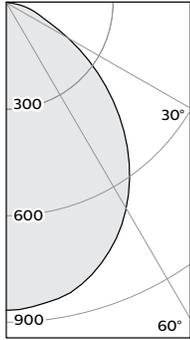
	Lumens	Input volts	Input freq.	Input current	LED drive current	Input power	LED power	THD factor	Power factor
<b>L6RAE1VA / L6R15RE1VA</b>	1500	120V	50/60Hz	0.14A	350mA	16W	13W	<20%	>0.9
<b>L6RAZ10UVA / L6R15RZ10UVA</b>	1500	120V	50/60Hz	0.14A	350mA	17W	13W	<10%	>0.9
		277V	50/60Hz	0.07A	350mA	17W	15W	<15%	>0.9
<b>L6R20AE1VA / L6R20RE1VA</b>	2000	120V	50/60Hz	0.175A	470mA	19W	16W	<20%	>0.9
<b>L6R20AZ10UVA / L6R20R10UVA</b>	2000	120V	50/60Hz	0.26A	470mA	20W	16W	<10%	>0.95
		277V	50/60Hz	0.11A	470mA	20W	16W	<15%	>0.95

# L6R LyteCaster 6" Round

## General purpose downlight

### 80 CRI, 1500 lumens

#### Candela Curves



Angle	Mean CP	Lumens
0	730	
5	724	69
10	412	
15	698	197
20	671	
25	634	292
30	596	
35	538	336
40	473	
45	397	304
50	314	
55	235	210
60	161	
65	107	111
70	80	
75	59	62
80	37	
85	16	18
90	0	

#### Single unit data

Height to Lighted Plane	Initial Center Beam Foot-Candles	Beam Dia. (ft)*
5'	29	6.0'
6'	20	7.2'
7'	15	8.4'
8'	11	9.6'
9'	9	10.8'

\* Beam diameter is where foot-candles drop to 50% of maximum.

#### Multiple unit data - RCR 2

Spacing on center	Initial Center Beam Foot-Candles	Watts per Sq. Ft.
5'	66.8	0.71
6'	43.8	0.47
7'	31.3	0.33
8'	26.1	0.28
9'	20.9	0.22

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

#### Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%											
Wall	70	50	30	10	50	10	50	10	50	10	0											
RCR	Zonal cavity method - Effective floor reflectance = 20%																					
Room Cavity Ratio	0	1	2	3	4	5	6	7	8	9	10	119	119	119	119	116	116	111	111	106	106	100
	1	110	106	102	99	104	97	100	94	96	92	87	87	87	83	82	89	80	86	79	75	75
	2	102	94	88	83	92	82	89	80	86	79	75	75	75	71	71	80	69	77	68	65	65
	3	94	84	77	71	83	71	80	69	77	68	65	65	65	62	62	74	61	72	60	57	57
	4	86	76	68	62	74	61	72	60	70	60	57	57	57	54	54	61	48	59	47	45	45
	5	80	68	60	54	67	54	65	53	63	53	50	50	50	47	47	55	42	54	42	40	40
	6	74	62	54	48	61	48	59	47	58	47	45	45	45	43	43	51	38	50	38	36	36
	7	69	57	48	43	56	43	54	42	53	42	40	40	40	38	38	47	35	46	35	33	33
	8	65	52	44	38	51	38	50	38	48	38	36	36	36	34	34	45	34	45	34	32	32
	9	60	48	40	35	47	35	46	35	45	34	33	33	33	32	32	42	31	42	31	30	30
	10	57	44	37	32	44	32	43	32	42	31	30	30	30	29	29	42	31	42	31	30	30

Frame: L6RAE1VA / L6RAZ10UVA / L6R15RE1VA / L6R15RZ10UVA  
Light engine: L6R15835VA  
Trim: L6RDW

Report no<sup>3</sup>: 686GFR

Output lumens: 1599 lm  
Input Watts: 16 W  
Spacing Criterion: 1.2

Efficacy: 99.9 lm/W  
CCT<sup>2</sup>: 3500 K  
CRI: ≥80

#### Zonal lumens & percentages

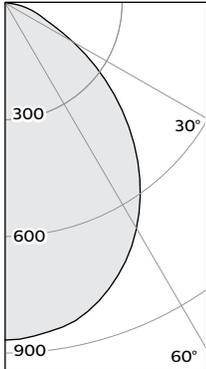
Zone	Lumens	% Luminaire
0-30	5558	34.6%
0-40	893	55.9%
0-60	1408	88.1%
0-90	1599	100.0%

#### CRI and CCT adjustment factors

90CRI 2700K = 71%
90CRI 3000K = 81%
80CRI 2700K = 89%
80CRI 3000K = 97%
80CRI 3500K = 100%
80CRI 4000K = 102%

### 80 CRI, 2000 lumens

#### Candela Curves



Angle	Mean CP	Lumens
0	863	
5	856	81
10	843	
15	818	230
20	778	
25	730	336
30	671	
35	604	377
40	529	
45	448	345
50	365	
55	284	254
60	205	
65	137	141
70	98	
75	70	74
80	43	
85	19	22
90	0	

#### Single unit data

Height to Lighted Plane	Initial Center Beam Foot-Candles	Beam Dia. (ft)*
5'	35	5.5'
6'	24	6.6'
7'	18	7.7'
8'	13	8.8'
9'	11	9.9'

\* Beam diameter is where foot-candles drop to 50% of maximum.

#### Multiple unit data - RCR 2

Spacing on center	Initial Center Beam Foot-Candles	Watts per Sq. Ft.
5'	77.5	0.88
6'	50.8	0.58
7'	36.3	0.41
8'	30.3	0.34
9'	24.2	0.27

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

#### Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%											
Wall	70	50	30	10	50	10	50	10	50	10	0											
RCR	Zonal cavity method - Effective floor reflectance = 20%																					
Room Cavity Ratio	0	1	2	3	4	5	6	7	8	9	10	119	119	119	119	116	116	111	111	106	106	100
	1	110	106	102	99	104	97	100	94	96	91	87	87	87	83	82	89	80	86	78	75	75
	2	101	94	88	83	92	82	89	80	86	78	75	75	75	71	71	80	69	77	68	65	65
	3	93	84	77	71	82	70	79	69	77	68	65	65	65	62	62	74	61	72	60	57	57
	4	86	75	67	61	74	61	72	60	70	60	57	57	57	54	54	61	48	59	47	45	45
	5	80	68	60	54	67	53	65	53	63	52	50	50	50	47	47	55	42	54	42	40	40
	6	74	62	53	47	61	47	59	47	57	46	44	44	44	43	43	51	38	50	38	36	36
	7	69	56	48	42	55	42	54	42	53	42	39	39	39	38	38	47	35	46	34	32	32
	8	64	52	44	38	51	38	50	38	48	38	36	36	36	34	34	45	34	45	34	32	32
	9	60	48	40	35	47	35	46	34	45	34	33	33	33	32	32	42	31	42	31	30	30
	10	57	44	37	32	44	32	43	31	42	31	30	30	30	29	29	42	31	42	31	30	30

#### Zonal lumens & percentages

Zone	Lumens	% Luminaire
0-30	647	34.8%
0-40	1023	55.1%
0-60	1622	87.3%
0-90	1859	100.0%

#### CRI and CCT adjustment factors

90CRI 2700K = 71%
90CRI 3000K = 81%
80CRI 2700K = 89%
80CRI 3000K = 97%
80CRI 3500K = 100%
80CRI 4000K = 102%

1. Wattage: controlled to within ± 5%
2. Correlated Color Temperature: within specs as defined in ANSI\_NEMA\_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.
3. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.

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Philips Lighting North America Corporation  
200 Franklin Square Drive, Somerset, NJ 08873  
Tel. 855-486-2216

Philips Lighting Canada Ltd.  
281 Hillmount Rd, Markham, ON, Canada L6C 2S3  
Tel. 800-668-9008