

PHILIPS LIGHTOLIER

Downlighting

Flat downlight

4" and 6" round aperture



Philips Lightolier LED Flat downlight provides an easy and quick downlight solution without the traditional frame and reflector. Perfect for installation in existing ceilings or new construction with the benefits of energy saving LED technology.

Project: _____
 Location: _____
 Cat.No: _____
 Type: _____
 Lamps: _____ Qty: _____
 Notes: _____

Fixture

example: FD6R09930TE1W

Family	Size	Lumens	CRI	CCT	Dimming	Voltage	Finish
FD			9		TE	1	W
FD Flat Downlight	4R 4-inch Round	07 700 lm	9 90	30 3000K 40 4000K	TE Triac & ELV	1 120V	W White (matte)
	6R 6-inch Round	09 900 lm	9 90	30 3000K 40 4000K	TE Triac & ELV	1 120V	W White (matte)

Accessories

example: FDRN

Family	Model
FD	
FD Flat Disk	RN Round new construction plate 06C 6' extension cable 20C 20' extension cable

Features

- Flange:** aluminum, painted white.
- Lens:** diffuser is used for smooth and diffused light pattern.
- Junction Box:** steel, 4 7/8" x 1 1/4" x 4 1/8" (124mm x 32.6mm x 105.2mm). Clip attached on the side of the J-box to connect with fixture or new construction plate to meet NEC (National Electric Code). J-box also has key holes on the side for mounting on joist (see page 2).
- Connector:** locking power connection is used to connect J-box and fixture. Standard length of the connection is 16" (400mm). Extension cable available as accessory.
- Ceiling cutout:** installation template on adhesive backed label is supplied with the product.
4" round: 4 3/16" (106mm) diameter.
6" round: 6" (152mm) diameter.
- Gasket:** foam gasket supplied with fixture.
- New Construction plate:** steel, 10" x 17 1/2" (254mm x 445mm). Holes on the side of the plate for mounting.

Electrical

Electronic power supply: RoHS compliant.* Class 2 power unit.
 Remote power supply can only accommodate one LED module and cannot be shared with other LED module.
 Fixture can be through wired.
Dimming: Intended for ELV/TRIAC (120V) dimming. For more details, refer to LED-DIM-DL spec sheet.

	Lumen output	Input voltage	Input freq	Max. input current	Max. input power	Max. THD	Power factor
4" Round	700lm	120V	60Hz	0.13A	13W	15.3%	1
6" Round	900lm	120V	60Hz	0.15A	15.5W	14%	1

* Restrictions on Hazardous Substances (RoHS) is a European directive (2002/95/EC) designed to limit the content of 6 substances [lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE)] in electrical and electronic products. For products used in North America compliance to RoHS is voluntary and self-certified.

Labels

cULus listed (UL 1598) for wet locations (covered ceiling only). IC rated for direct contact with thermal insulation.
 AirSeal for minimal air leakage.
 ENERGY STAR® certified.
 Title 24 compliant.

Warranty

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

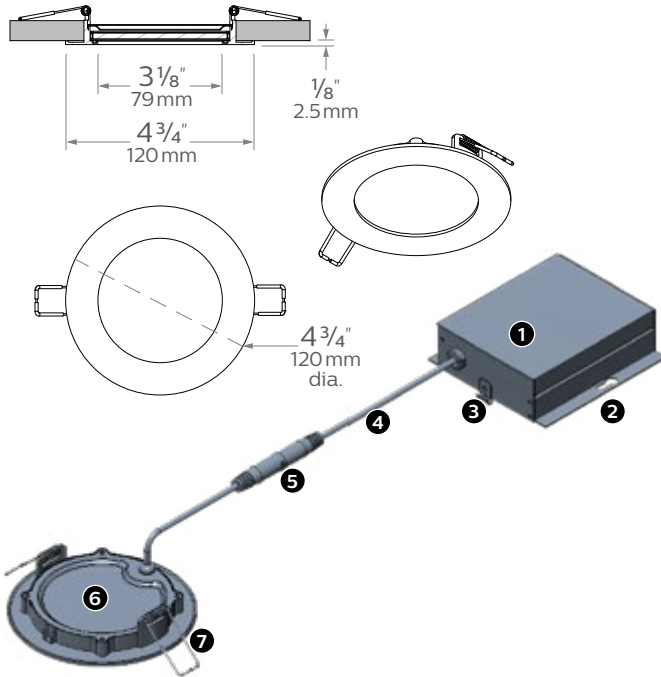


FDR Flat downlight

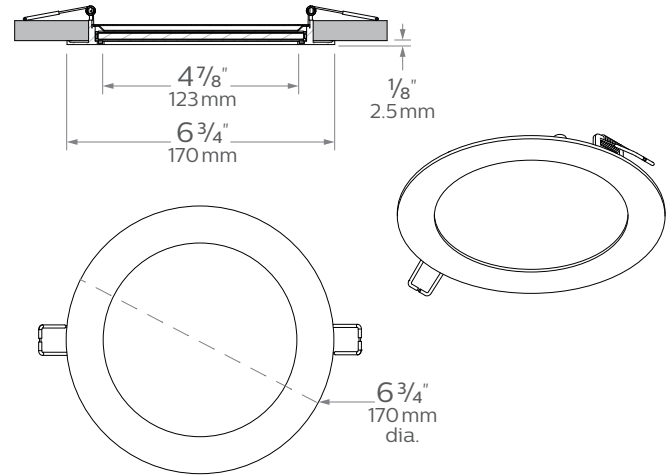
4" and 6" round aperture surface mount downlight

Dimensions

Flat Downlight 4"



Flat Downlight 6"

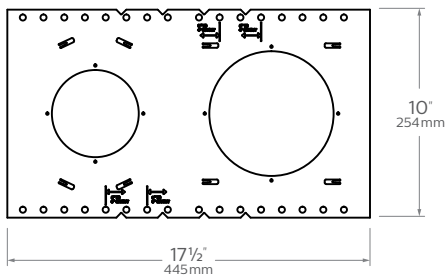


Components

1. Electrical Box with knockouts
2. Mounting keyhole
3. Remodel NEC* clip
4. 19.5" (0.5m) cord
5. Locking power connector
6. Integrated LED Luminaire
7. Spring clip for easy mounting

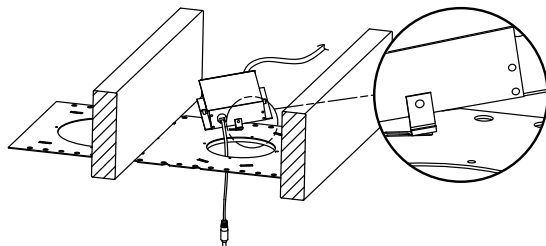
* National Electric Code

Frame plate

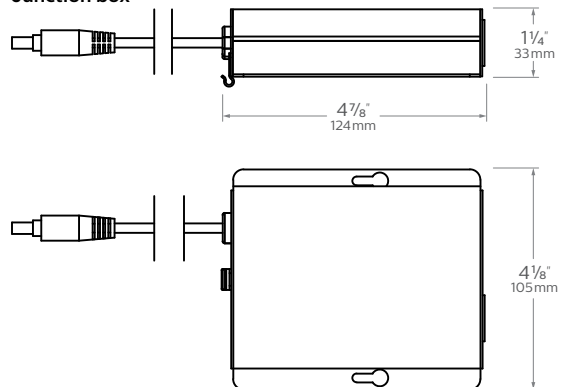


Secure J-Box to frame plate:

slide junction box clip into slot and catch finger tab.

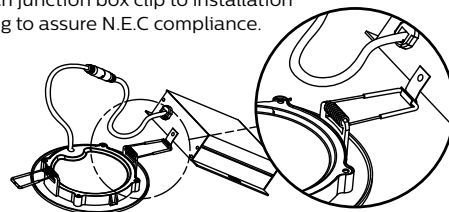


Junction box



Remodeler applications:

attach junction box clip to installation spring to assure N.E.C compliance.

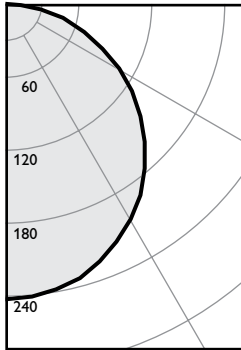


FDR Flat Downlight

4" and 6" round aperture surface mount downlight

4-inch, 12W, 61.3 lm/W

Candela Curve



Fixture: **FD4R07930KTE1W**

Output lumens: 705 lm
 Input watts: 11.5 W
 CRI: 90 min
 CCT¹: 3000K
 Spacing Crit.: 1.3
 Beam Angle: 112°

Zonal summary

Zone	Lumens	%Luminaire
0-30	188	27.0%
0-40	308	44.2%
0-60	544	78.2%
0-90	696	100.0%

Angle	Mean CP	Lumens
0	242	
5	241	23
10	238	
15	233	66
20	225	
25	216	99
30	204	
35	191	120
40	177	
45	161	124
50	144	
55	126	112
60	107	
65	87	86
70	68	
75	48	51
80	29	
85	12	15
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	10	6.5'
6'	7	7.8'
7'	5	9.1'
8'	4	10.4'
9'	3	11.7'

* 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'	27.8	0.51
6'	18.3	0.33
7'	13.0	0.24
8'	10.9	0.20
9'	8.7	0.16

38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Efficacy: 61.3 lm/w
 Report#: PR7060901

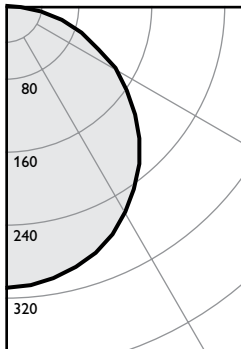
Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%	
	70	50	30	10	50	10	50	10	50	10	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	119	119	119	119	116	116	111	111	106	106	100
1	109	104	99	95	101	94	97	91	93	88	83	83
2	99	90	83	77	88	76	85	75	81	73	69	69
3	90	79	71	64	77	64	74	62	72	61	58	58
4	82	70	61	54	69	54	66	53	64	52	49	49
5	75	62	53	47	61	46	59	46	57	45	43	43
6	70	56	47	41	55	40	53	40	52	40	37	37
7	65	51	42	36	50	36	49	35	47	35	33	33
8	60	46	38	32	46	32	44	32	43	31	29	29
9	56	43	34	29	42	29	41	29	40	28	26	26
10	53	39	31	26	39	26	38	26	37	26	24	24

CCT adjustment factors 90CRI 4000K =112%

6-inch, 14W, 71.2 lm/W

Candela Curve



Fixture: **FD6R07930KTE1W**

Output lumens: 982 lm
 Input watts: 13.8 W
 CRI: 90 min
 CCT¹: 3000K
 Spacing Crit.: 1.3
 Beam Angle: 113°

Zonal summary

Zone	Lumens	%Luminaire
0-30	239	26.8%
0-40	392	44.0%
0-60	694	77.9%
0-90	891	100.0%

Angle	Mean CP	Lumens
0	308	
5	306	29
10	302	
15	295	83
20	286	
25	274	126
30	260	
35	244	153
40	226	
45	206	159
50	184	
55	161	144
60	137	
65	112	111
70	87	
75	62	66
80	39	
85	17	20
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	12	6.5'
6'	9	7.8'
7'	6	9.1'
8'	5	10.4'
9'	4	11.7'

* 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'	35.6	0.61
6'	23.3	0.40
7'	16.7	0.29
8'	13.9	0.24
9'	11.1	0.19

38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Efficacy: 71.2 lm/w
 Report#: PR7060903

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
	70	50	30	10	50	10	50	10	50	10	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	119	119	119	116	116	111	111	106	106	100
1	108	104	99	95	101	94	97	91	93	88	83
2	98	90	83	77	88	76	85	75	81	73	69
3	90	79	71	64	77	63	74	62	72	61	58
4	82	70	61	54	68	54	66	53	64	52	49
5	75	62	53	46	61	46	59	46	57	45	43
6	70	56	47	41	55	40	53	40	52	40	37
7	64	51	42	36	50	36	48	35	47	35	33
8	60	46	38	32	46	32	44	32	43	31	29
9	56	43	34	29	42	29	41	29	40	28	26
10	53	39	31	26	39	26	38	26	37	26	24

CCT adjustment factors 90CRI 4000K =112%

1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.
 2. 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