

LIGHTOLIER

by @signify

Downlighting

Calculite 3"

C3RDL Round downlight



Calculite 3" features industry leading visual comfort, excellent uniform illumination over time, and patented installation flexibility.

Complete luminaire = Frame + Engine + Trim + Accessories (optional)

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

Frame

example: 3RN

Series	Installation	Voltage / Options	
3R			
3R Uniframe 3" round frame	N New construction	— Universal (120V/277V) EM Emergency (see pg 2 for details & limitations) ¹ IP Interact Pro ready (for 0-10V engine only) ²	LC Chicago plenum 3 347V (not compatible with ELV dimming) 3IP 347V with Interact Pro (for 0-10V engine only) ²
	A AirSeal IC (1000lm max)	— Standard universal (120V/277V) ³	S Shallow universal (120V/277V) ³
	Note: For remodeler installations, order light engine and trim only (no frame needed)		

Engine

example: C3L10930NZ10US

Series	Lumens	CRI	CCT	Beam	Dimming	Voltage	Plenum
C3L		9					
C3L Calculite 3" light engine	05 500lm 07 750lm 10 1000lm 15 1500lm 18 1800lm	9 90CRI	27 2700K 30 3000K 35 3500K 40 4000K	N Narrow (33°) M Medium (55°) W Wide (62°)	Z10 0-10V 1% L Lutron PEQ0 (Dim to 0.1%)	U Universal (120V/277V/347V)	- Standard
					E ELV	1 120V	
	10 1000lm	9 90CRI	D2W 3000K-1800K ⁴				
	07 750lm 10 1000lm	9 90CRI	27 2700K 30 3000K 35 3500K 40 4000K	N Narrow (33°) M Medium (55°) W Wide (62°)	Z10 0-10V 1%	U Universal (120V/277V/347V)	R Remodeler ⁵ S Shallow ³
					E ELV	1 120V	

Trim

example: C3RDLBTF

Series	Style	Reflector	Flange	Type
C3R	DL			
C3R Calculite 3" round trim	DL Downlight (for remodeler & new construction)	BK Black (anodized) CL Specular clear CC Comfort clear CD Comfort clear diffuse CZ Champagne bronze (anodized)	- White (matte) P Matching reflector	F Flangeless ⁶ - Standard depth with 50° cutoff
		WH White (matte)	- White (matte)	
		WT Textured white (painted) BT Textured black (painted) BZ Bronze (painted) D Aluminum diffuse (painted)	P Matching reflector	F Flangeless ⁶ S 1" regress cast aluminum (wide beam only)

Accessories

CA3RFT	Mud-in ring for use in round flangeless trim installations (ordered with a flangeless trim)
SWZDT	SpaceWise wireless controller with dwell time functionality (compatible with all 0-10V options, see SWZDT spec sheet)
SRAINT	InterAct Office accessory (for use with Lightolier UniFrame 0-10V products)

- Emergency (EM) frame includes emergency battery with ceiling mounted test switch (no reflector mountable test switch). Requires above ceiling access. Ceiling mount test switch only (see page 2 for details and limitations).
- InterAct Pro requires above ceiling access.
- Must order shallow IC frame, shallow engine for complete shallow assembly. Standard depth trims are compatible with shallow frame.
- Dim to Warm (D2W) engines are for Non-IC (N) frames only.
- For remodeler installations, order light engine and trim only (no frame needed).
- Flangeless (F) trims require CA3SFT mud-in accessory for installation.



interact
ready.

C3RDL Calculite 3"

Round downlight

Frame-in-kits

New construction:

Galvanized stamped steel for dry or plaster ceilings. Preinstalled telescoping mounting bars from 13" to 24". For 4' distances, use 1/2" EMT, 1-1/2" x 1/2" U or C channel.

Max ceiling thickness is 1.25" (32mm)

Patented install mounting frame:

- Pre-installed mounting bars for fast and tool-less installs into T-grid & hat channel ceilings.
- Close-cut aperture design eliminates possibility of gap between ceiling opening and reflector flange.
- Separate wiring compartment for wiring frame to building allows inspection prior to light engine install.
- Simple plug-and-play connection between frame and light engine from below ceiling.

Dimming

- Advance 0-10V 1% dimming
- Lutron PEQO Hi-lume Premier 0.1% EcoSystem
- ELV (consult factory)

Optical systems

Comfort throughout the space:

True 50° physical cutoff and 45° reflected cutoff

Quality of light:

2 SDCM ensures color consistency from fixture to fixture and over the luminaire's long lifetime.

Light engine

Quick connect power pack allow for easy installation and replacement from below ceiling with no need for additional wiring. This allows for:

- Frame and ceiling installation to be performed while still finalizing details such as lumen packages, CCT and control type.
- Easy replacement of electronics at end of life with minimal wasted material and labor required.
- Ease and upgradability of technology.

Interact Pro (IAP)

- Requires above ceiling access for service.
- Interact Pro brings the power of connected lighting to small and medium businesses without the complexity usually associated with connected lighting.
- Interact Pro includes an app, a portal and a broad portfolio of wireless luminaires, lamps and retrofit kits all working on the same system.
- Commissioning via Interact Pro App (Android or iPhone).
- Prepare commissioning remotely via Interact Pro portal.
- Requires compatible Interact Pro Gateway and internet connectivity for commissioning.
- Compatible with UID8451/10 ZigBee Greenpower wireless dimmer switch.
- Compatible with wireless Occ sensor (OCC SENSOR IA CM IP42 WH 10/1) or wireless Day/Occ sensor (OCC MULTI SENSOR IA CM WH 10/1).
- For more information on Interact Pro visit: www.interact-lighting.com/pro.
- For more information on Interact Ready visit: www.philips.com/interact-ready.

Options and accessories

Flangeless mud-in ring: Use CA3RFT for use with flangeless plaster installations.

ENERGY STAR® exceptions

- Champagne Bronze & Black finishes
- 347V & Emergency voltage/options
- Lutron configurations
- D2W: only CC and CL reflector finishes meet Energy Star requirements

Title 24 exceptions

- BK and CZ finishes
- Must be installed in shallow AirSeal frame

Labels and listings

- cULus listed for wet locations
- ENERGY STAR® certified
- CEC Title 24 JA8 certified
- CCEA (frames with *LC suffix)

Warranty



5 year limited warranty
Visit Signify.com/warranties for more information on Signify's standard 5-year limited warranty on complete luminaire systems.

0-10V electrical tables

Light engine	Input volts	Input current	Drive current	Input power
C3L05_Z10U	120 V	0.06 A	150 mA	7.0 W
	277 V	0.02 A		
C3L07_Z10U	120 V	0.08 A	220 mA	9.5 W
	277 V	0.03 A		
C3L10_Z10U	120 V	0.12 A	330 mA	13.6 W
	277 V	0.05 A		
C3L15_Z10U	120 V	0.16 A	450 mA	18.6 W
	277 V	0.07 A		
C3L18_Z10U	120 V	0.17 A	500 mA	20.4 W
	277 V	0.07 A		
C3L07_Z10US C3L07_Z10UR	120 V	0.08 A	220 mA	9.4 W
	277 V	0.03 A		
C3L10_Z10UR C3L10_Z10US	120 V	0.12 A	330 mA	14.1 W
	277 V	0.05 A		

ELV electrical tables

Light engine	Input volts	Input current	Drive current	Input power
C3L05_E1	120 V	0.05 A	150 mA	5.4 W
	277 V	0.02 A		
C3L07_E1	120 V	0.08 A	220 mA	8.7 W
	277 V	0.03 A		
C3L10_E1	120 V	0.11 A	330 mA	13.2 W
	277 V	0.05 A		
C3L15_E1	120 V	0.15 A	450 mA	17.4 W
	277 V	0.06 A		
C3L18_E1	120 V	0.17 A	500 mA	19.7 W
	277 V	0.07 A		
C3_A05_E1S C3_A05_E1R	120 V	0.08 A	220 mA	8.7 W
	277 V	0.03 A		
C3_A10_E1R C3_A10_E1S	120 V	0.11 A	330 mA	13.2 W
	277 V	0.05 A		

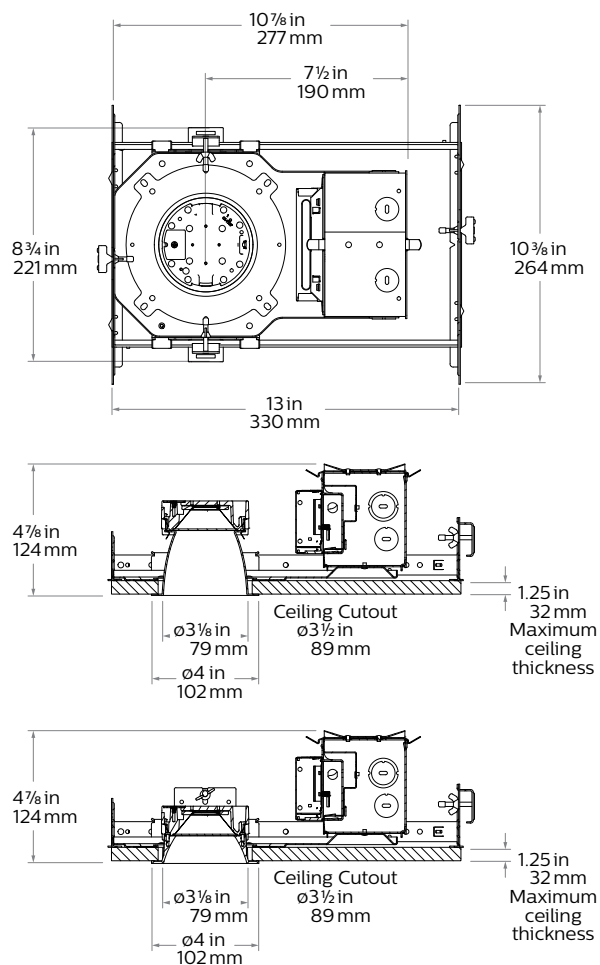
Lutron electrical tables

Light engine	Input volts	Input current	Drive current	Input power
C3L05_LU	120 V	0.06 A	150 mA	6.2 W
	277 V	0.02 A		
C3L07_LU	120 V	0.08 A	220 mA	8.8 W
	277 V	0.03 A		
C3L10_LU	120 V	0.12 A	330 mA	13.0 W
	277 V	0.05 A		
C3L15_LU	120 V	0.15 A	450 mA	17.7 W
	277 V	0.06 A		
C3L18_LU	120 V	0.17 A	500 mA	19.8 W
	277 V	0.07 A		

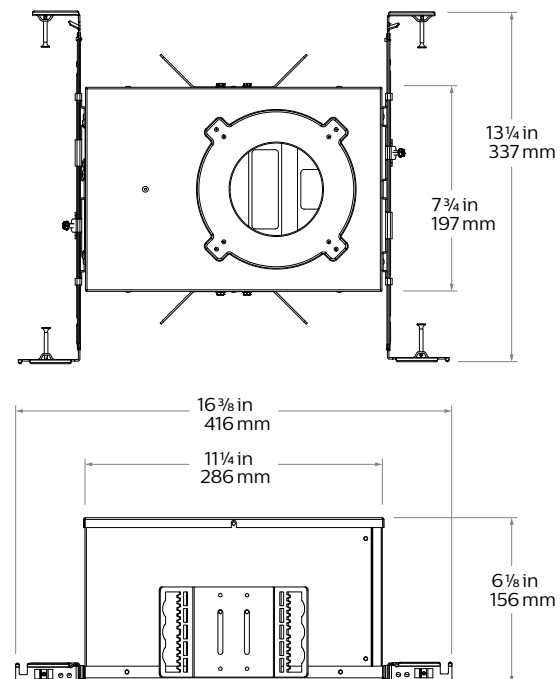
C3RDL Calculite 3"

Round downlight

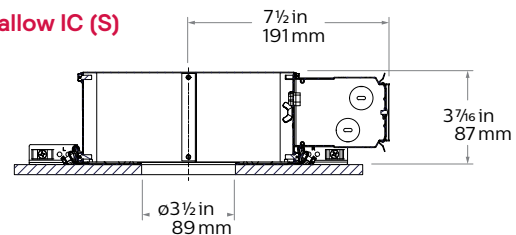
New construction (N)



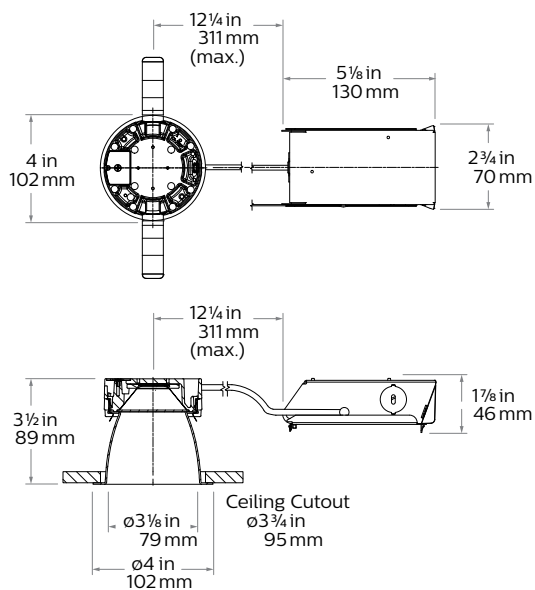
Standard IC (A) and Chicago plenum (LC)



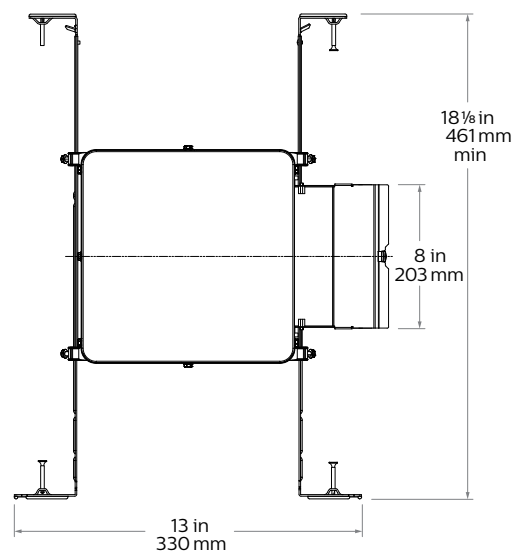
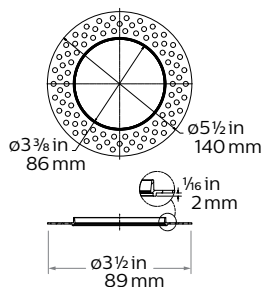
Shallow IC (S)



Remodeler (R)



Flangeless mud-in ring (CA3RFT) accessory



C3RDL Calculite 3"

Round downlight

Polished Reflectors Shown as round reflectors but represent the finish of Calculite square reflectors.



Specular clear (CL): Most specular and most efficient finish, delivers maximum photometric performance but can produce a mirror image effect of the interior space.



Champagne bronze (CZ): Semi-specular finish that softens light at the source of the reflector while providing a warmer reflector appearance (slightly warmer).



Comfort clear (CC): Semi-specular finish that softens the light at the source of the reflector and creates a subtle, even luminance from the reflector cone.



White (WH): (matte) Brightest illuminated aperture and provides the smoothest transition to most ceilings when off (white is only available with a white flange).



Comfort clear diffuse (CD): Slightly diffuse clear finish, that eliminates iridescence and reduces the mirror image effect inherent with specular finishes.



Black (BK): (anodized) Specular finish that provides the lowest aperture brightness possible and significantly reduces source identification in a ceiling.

Textured Reflectors Shown as square reflectors but represent the finish of Calculite round reflectors.



Aluminum diffuse (D):
Matte painted finish.



Textured white (WT):
Matte painted finish.



Bronze (BZ):
Matte painted finish.



Textured black (BT):
Matte painted finish.

Flanges



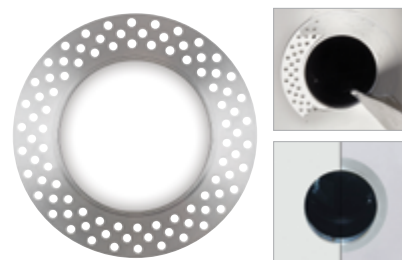
White (-): (matte) Provides the smoothest transition to ceilings when off.



Polished (P): (matches aperture) Produces a continuous look throughout the reflector (aperture matching).



Flangeless (F): (flush-mount) Creates a flush, virtually seamless transition from aperture to ceiling.



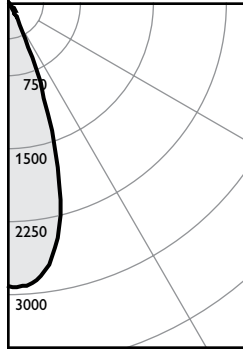
Mud-in ring (FT): Low profile, machined aluminum mud-in ring provides a raised rib to plaster up to and a 3/16" flange thickness. The ring is attached to the ceiling material as opposed to the frame-in kit to avoid conduction of heat and vibration which can cause yellowing or cracking of the plaster.

C3RDL Calculite 3"

Round downlight

Narrow beam (standard), 1000lm engine, 87.3 lm/W at 14W

Candela Curve



Frame: **3RN**
Engine: **C3L10935NZ10U**
Trim: **C3RDLCC**

Output lumens: 1222 lms
Input watts: 14 W
CRI: 90 min
CCT¹: 3500K
Spacing Crit.: 0.64

Zonal summary

Zone	Lumens	%Luminaire
0-30	1074	87.9%
0-40	1152	94.3%
0-60	1220	99.8%
0-90	1222	100.0%

Angle	Mean CP	Lumens
0	2906	
5	2891	293
10	2618	
15	2078	586
20	1161	
25	495	229
30	171	
35	116	73
40	117	
45	85	66
50	10	
55	5	4
60	13	
65	2	1
70	1	
75	0	1
80	0	
85	0	0
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	116	3.2'
6'	81	3.8'
7'	59	4.5'
8'	45	5.1'
9'	36	5.8'

* 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'	57.2	0.62
6'	37.6	0.41
7'	26.8	0.29
8'	22.4	0.24
9'	17.9	0.19

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

Efficacy: **87.3lm/w**
Report²: 1763GFR

Adjustment factors

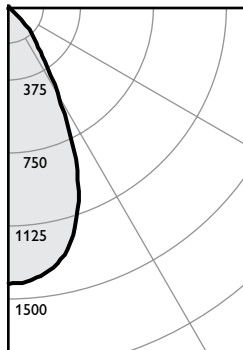
Tall cone	Shallow cone	CCT	Lumens
CL = 105%	WT = 112%	90CRI 4000K = 104%	1800lm = 142%
CC = 100%	WH = 110%	90CRI 3500K = 100%	1500lm = 130%
CD = 80%	D = 100%	90CRI 3000K = 96%	1000lm = 100%
WH = 80%	BZ = 77%	90CRI 2700K = 90%	750lm = 70%
CZ = 78%	BK = 75%		500lm = 50%
BK = 40%	BT = 74%		

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	119	119	119	119	116	111	111	106	106	100	
	1	114	112	110	108	110	106	106	103	102	100	95
	2	110	106	102	100	104	98	101	96	98	94	91
	3	106	100	96	93	99	92	96	91	94	89	87
	4	102	95	91	87	94	87	92	86	90	85	83
	5	98	91	86	83	90	82	88	82	87	81	79
	6	94	87	82	78	86	78	85	78	83	77	76
	7	91	83	78	75	83	75	81	74	80	74	72
	8	88	80	75	72	79	71	78	71	77	71	70
	9	85	77	72	69	76	69	75	68	75	68	67
10	82	74	69	66	73	66	73	66	72	66	64	

Medium beam (standard), 1000lm engine, 80.6 lm/W at 14W

Candela Curve



Frame: **3RN**
Engine: **C3L10935MZ10U**
Trim: **C3RDLCC**

Output lumens: 1128 lms
Input watts: 14 W
CRI: 90 min
CCT¹: 3500K
Spacing Crit.: 0.86

Zonal summary

Zone	Lumens	%Luminaire
0-30	836	74.1%
0-40	1039	92.1%
0-60	1126	99.8%
0-90	1128	100.0%

Angle	Mean CP	Lumens
0	1418	
5	1408	143
10	1365	
15	1268	359
20	1075	
25	814	377
30	527	
35	324	203
40	213	
45	104	81
50	16	
55	6	6
60	3	
65	2	2
70	1	
75	0	1
80	0	
85	0	0
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	57	4.3'
6'	39	5.2'
7'	29	6.0'
8'	22	6.9'
9'	18	7.7'

* 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'	51.7	0.62
6'	33.9	0.41
7'	24.2	0.29
8'	20.2	0.24
9'	16.1	0.19

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

Efficacy: **80.6lm/w**
Report²: 1758GFR

Adjustment factors

Tall cone	Shallow cone	CCT	Lumens
CL = 105%	WT = 112%	90CRI 4000K = 104%	1800lm = 142%
CC = 100%	WH = 110%	90CRI 3500K = 100%	1500lm = 130%
CD = 80%	D = 100%	90CRI 3000K = 96%	1000lm = 100%
WH = 80%	BZ = 77%	90CRI 2700K = 90%	750lm = 70%
CZ = 78%	BK = 75%		500lm = 50%
BK = 40%	BT = 74%		

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	119	119	119	119	116	116	111	111	106	106	100
	1	114	111	109	106	109	105	105	101	101	98	94
	2	108	103	100	96	102	95	99	93	96	91	88
	3	103	97	92	88	95	87	93	86	90	85	82
	4	98	91	85	81	89	81	87	80	85	79	76
	5	93	85	79	75	84	75	82	74	81	74	71
	6	89	80	74	70	79	70	78	69	76	69	67
	7	84	75	70	65	75	65	73	65	72	65	63
	8	80	71	65	61	71	61	70	61	69	61	59
	9	77	67	62	58	67	58	66	57	65	57	56
10	73	64	58	54	63	54	63	54	62	54	53	

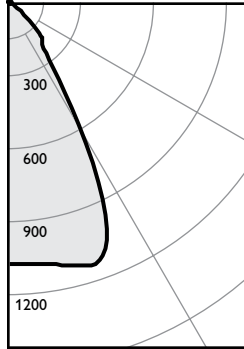
1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.
2. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.

C3RDL Calculite 3"

Round downlight

Wide beam (standard), 1000lm engine, 77.1 lm/W at 14W

Candela Curve



Frame: **3RN**
Engine: **C3L10935WZ10U**
Trim: **C3RDLCC**

Output lumens: 1079 lms
Input watts: 14 W
CRI: 90 min
CCT¹: 3500K
Spacing Crit.: 1.02

Zonal summary

Zone	Lumens	%Luminaire
0-30	807	74.8%
0-40	985	91.3%
0-60	1076	99.7%
0-90	1079	100.0%

Angle	Mean CP	Lumens
0	1073	
5	1080	109
10	1096	
15	1121	318
20	1106	
25	903	418
30	512	
35	260	163
40	196	
45	113	88
50	17	
55	7	6
60	3	
65	2	2
70	1	
75	0	1
80	0	
85	0	0
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	43	5.1'
6'	30	6.1'
7'	22	7.1'
8'	17	8.2'
9'	13	9.2'

* 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'	49.3	0.62
6'	32.4	0.41
7'	23.1	0.29
8'	19.3	0.24
9'	15.4	0.19

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

Efficacy: 77.1lm/w
Report²: 1770GFR

Adjustment factors

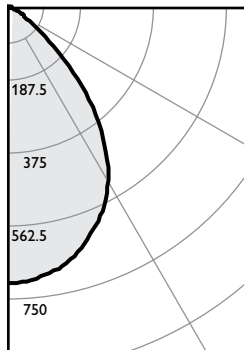
Tall cone	Shallow cone	CCT	Lumens
CL = 105%	WT = 112%	90CRI 4000K = 104%	1800lm = 142%
CC = 100%	WH = 110%	90CRI 3500K = 100%	1500lm = 130%
CD = 80%	D = 100%	90CRI 3000K = 96%	1000lm = 100%
WH = 80%	BZ = 77%	90CRI 2700K = 90%	750lm = 70%
CZ = 78%	BK = 75%		500lm = 50%
BK = 40%	BT = 74%		

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	119	119	119	119	116	116	111	111	106	106	100
	1	114	111	109	106	109	105	105	101	101	98	94
	2	108	103	100	96	102	95	98	93	95	91	87
	3	103	97	92	87	95	87	92	85	90	84	81
	4	98	91	85	80	89	80	87	79	85	78	76
	5	93	85	79	74	83	74	82	73	81	73	71
	6	89	80	74	69	78	69	77	68	76	68	66
	7	84	75	70	64	74	64	73	64	71	64	62
	8	80	71	65	60	70	60	69	60	68	60	58
	9	77	67	62	56	66	56	65	56	64	56	54
10	73	64	58	53	62	53	61	53	61	53	51	

Wide beam (shallow), 1000lm engine, 79.0 lm/W at 13.6W

Candela Curve



Frame: **3RN**
Engine: **C3L10935WZ10U**
Trim: **C3RDLDS**

Output lumens: 1074 lms
Input watts: 13.6 W
CRI: 90 min
CCT¹: 3500K
Spacing Crit.: 1.12

Zonal summary

Zone	Lumens	%Luminaire
0-30	515	48.0%
0-40	783	72.9%
0-60	1037	96.6%
0-90	1074	100.0%

Angle	Mean CP	Lumens
0	707	
5	701	71
10	686	
15	659	185
20	620	
25	576	263
30	514	
35	433	269
40	337	
45	239	184
50	140	
55	74	67
60	47	
65	26	26
70	12	
75	7	7
80	4	
85	2	1
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	28	5.6'
6'	20	6.7'
7'	14	7.8'
8'	11	9.0'
9'	9	10.1'

* 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'	47.0	0.60
6'	31.0	0.40
7'	22.0	0.28
8'	18.0	0.24
9'	15.0	0.19

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

Efficacy: 79.0lm/w
Report²: 1810GFR

Adjustment factors

Tall cone	Shallow cone	CCT	Lumens
CL = 105%	WT = 112%	90CRI 4000K = 104%	1800lm = 142%
CC = 100%	WH = 110%	90CRI 3500K = 100%	1500lm = 130%
CD = 80%	D = 100%	90CRI 3000K = 96%	1000lm = 100%
WH = 80%	BZ = 77%	90CRI 2700K = 90%	750lm = 70%
CZ = 78%	BK = 75%		500lm = 50%
BK = 40%	BT = 74%		

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%	
Wall	70	50	30	10	50	102	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	112	109	106	103	107	102	103	98	99	95	91
	2	105	99	94	90	97	89	94	87	91	85	82
	3	98	90	84	79	89	79	86	77	84	76	73
	4	92	83	76	71	81	70	79	69	77	69	66
	5	86	76	69	63	75	63	73	63	71	62	60
	6	80	70	62	57	69	57	67	57	66	56	54
	7	75	64	57	52	64	52	62	52	61	51	49
	8	71	60	52	48	59	47	58	47	57	47	45
	9	67	55	48	44	55	44	54	43	53	43	42
10	63	52	45	40	51	40	50	40	49	40	38	

1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSI 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.

The information presented in this document is not intended as any commercial offer and does not form part of any quotation or contract.

