

# LIGHTOLIER

by @signify

## Downlighting

Calculite LED 4" gen 3

C4RA Round AirsSeal IC frame



Calculite LED 4" generation 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: 4RA

Series	Aperture	Installation
<b>4</b>	<b>R</b>	<b>A</b>
4 4" Non-IC	R Round	A AirSeal IC 120 V/277 V

### Engine

example: C4L15835NZ10U

Series	Lumens	CRI	CCT	Beam	Dimming	Voltage
<b>C4L</b>						
C4L Calculite LED 4"	<b>05</b> 500 lm (Z10 only)	<b>8</b> 80 CRI	<b>27</b> 2700 K	<b>N</b> Narrow (43°)	<b>Z10</b> 0-10 V 1%	<b>U</b> Universal 120 V/277 V
	<b>10</b> 1000 lm	<b>9</b> 90 CRI	<b>30</b> 3000 K	<b>M</b> Medium (56°)	<b>SOL</b> EldoLED Solo 0-10 V 0.1%	
	<b>15</b> 1500 lm		<b>35</b> 3500 K	<b>W</b> Wide (76°) <sup>2</sup>	<b>D</b> Dali 0.1%	
			<b>40</b> 4000 K		<b>L</b> Lutron LDE1 EcoSystem (fade-to-black)	
					<b>DMX</b> Digital Multiplexing	
					<b>E</b> ELV (120V dimming only)	<b>1</b> Universal 120 V/277 V
	<b>20</b> 2000 lm	<b>8</b> 80 CRI	<b>27</b> 2700 K	<b>M</b> Medium (56°)	<b>Z10</b> 0-10 V 1%	<b>U</b> Universal 120 V/277 V
		<b>9</b> 90 CRI	<b>30</b> 3000 K	<b>W</b> Wide (76°) <sup>2</sup>	<b>SOL</b> EldoLED Solo 0.1%	
			<b>35</b> 3500 K		<b>DMX</b> Digital Multiplexing	
			<b>40</b> 4000 K		<b>E</b> ELV (120V dimming only)	

### Trim

example: C4RDLCCP

Series	Aperture	Style	Finish	Flange
<b>C4</b>	<b>R</b>			
C4 Calculite LED 4"	R Round	<b>DL</b> Downlight	<b>CL</b> Specular clear	<b>-</b> White (matte)
		<b>WW</b> Open Wall Wash <sup>1</sup>	<b>CC</b> Comfort clear	<b>P</b> Polished (matches aperture)
		<b>LW</b> Lensed Wall Wash <sup>1</sup>	<b>CD</b> Comfort clear diffuse	<b>F</b> Flangeless (requires CA4RFT)
		<b>CW</b> Corner Wall Wash <sup>1,2</sup>	<b>CZ</b> Champagne bronze	
		<b>DW</b> Double Wall Wash <sup>1,2</sup>	<b>BK</b> Black (anodized)	
			<b>WH</b> White (matte)	<b>-</b> White (matte)
				<b>F</b> Flangeless (requires CA4RFT)

### Accessories

<b>CA4RFT</b>	Mud-in ring for use with flangeless installations (ordered with a flangeless trim)
<b>SWZDT</b>	SpaceWise wireless controller with dwell time functionality, compatible with all 0-10V configurations (for details see "SWZDT" spec sheet)

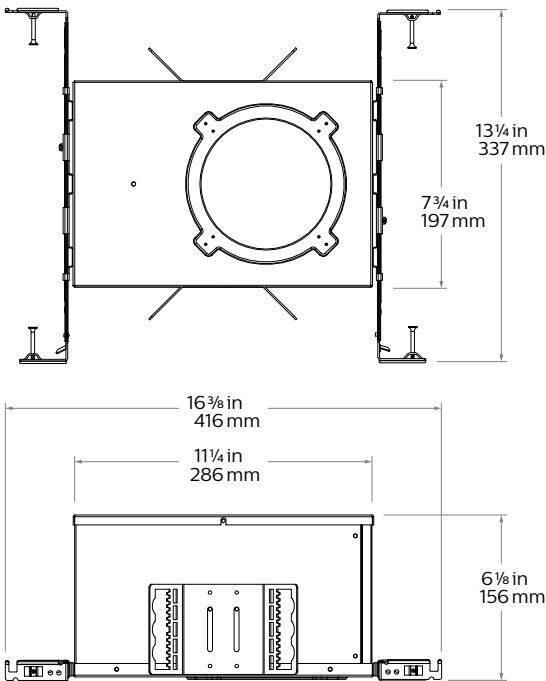
- Wide (W) beam is ideal for all Wall Wash (LW, WW, CW, DW) applications.
- Corner (CW) and Double (DW) Wall Wash are not available with flangeless (F) option.



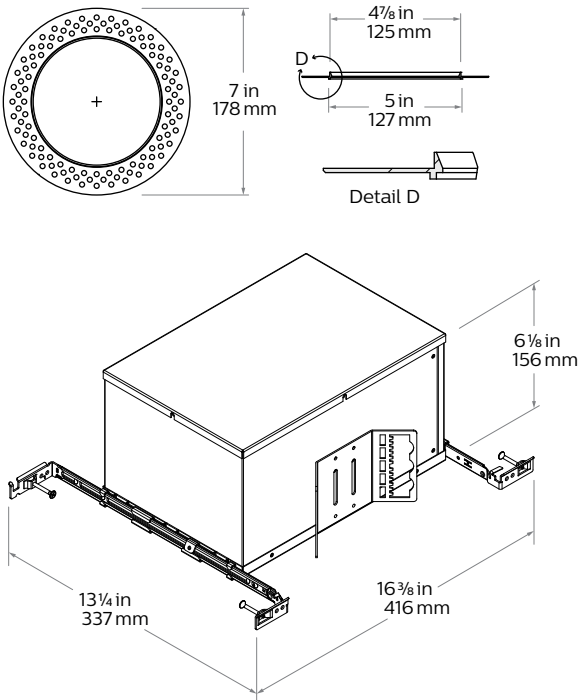
# C4RA    Calculite LED 4" gen 3

## Round AirsSeal IC frame

### AirsSeal (A)



### Flangeless mud-in ring (CA4RFT) accessory



### Narrow

Light engine	Input volts	Input freq	Input current	Drive current	Input power	THD power	Power factor
C4L05_NZ10U	120V	50/60Hz	0.05	110 mA	6W	<20%	>0.95
	277V		0.03			<20%	>0.90
C4L10_NZ10U	120V	50/60Hz	0.08	230 mA	11W	<15%	>0.95
	277V		0.04			<20%	>0.95
C4L15_NZ10U	120V	50/60Hz	0.12	360 mA	16W	<10%	>0.95
	277V		0.06			<15%	>0.95
C4L20_NZ10U	120V	50/60Hz	0.17	490 mA	21W	<10%	>0.95
	277V		0.08			<15%	>0.95

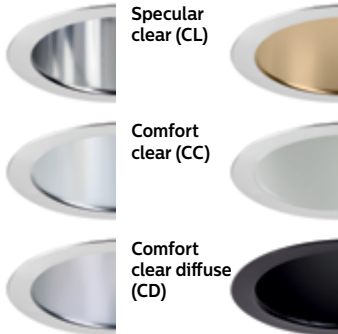
### Medium/Wide

Light engine	Input volts	Input freq	Input current	Drive current	Input power	THD power	Power factor
C4L05_MZ10U	120V	50/60Hz	0.05	110 mA	6W	<20%	>0.95
	277V		0.03			<20%	>0.90
C4L10_MZ10U	120V	50/60Hz	0.08	230 mA	11W	<15%	>0.95
	277V		0.04			<20%	>0.95
C4L15_MZ10U	120V	50/60Hz	0.12	350 mA	16W	<10%	>0.95
	277V		0.06			<15%	>0.95
C4L20_MZ10U	120V	50/60Hz	0.16	470 mA	21W	<10%	>0.95
	277V		0.08			<15%	>0.95

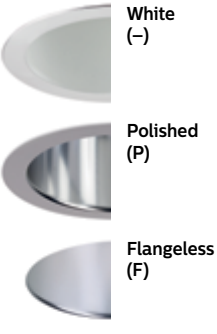
### Lifetime (TM-21) data

Lumens	Narrow beam	Medium/Wide beam
500lm	L85 @ 55,000hrs.	L90 @ 60,000hrs.
1000lm		
1500lm		
2000lm	L85 @ 55,000hrs.	L80 @ 60,000hrs.

### Reflector



### Flange



# C4RA Calculite LED 4" gen 3

## Round AirsSeal IC frame

### Frame-in-kits

#### AirsSeal

Black painted steel housing for dry or plaster ceilings. Pre-installed telescoping mounting bars from 13" to 24".

#### Patented install Mounting frame

With no driver attached, this versatile frame is independent of driver accommodating a wide range of lumen packages, driver types and CCTs, including 120V and 277V inputs.

Close-cut aperture design eliminates possibility of gap between ceiling opening & 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 eliminates need for wiring between frame and LED driver, and also saves time during installation and future replacements/upgrades. Plug-and-play receptacle accommodates technology upgrade of light engines and replacements for the life of the building.

### Drivers

- Advance 0-10V 1% dimming
- Lutron Hi-lume EcoSystem H Series 1% dimming
- EldoLED ECoDrive Dali 1% dimming
- EldoLED SOLOdrive 0-10V 0.1% dimming
- ELV dimming and DMX dimming

### Optical systems

#### Comfort throughout the space:

Patented optical system combines primary and secondary optics to provide a true 50° physical cutoff and 45° reflected cutoff virtually eliminating the view of the light source and bright spots in the reflector. A new reflector curve reduces reflector brightness by up to 50% compared to existing products, allowing for the use of higher lumen packages in smaller apertures without creating bright spots in the ceiling.

**Quality of light:** 2 SDCM ensures color consistency from fixture to fixture and over the luminaire's long lifetime. Proprietary optical grade silicone lens with patterned surface provides soft, even beam diffusion without hotspots or dark rings.

### Light Engine

Quick connect power pack comprised of light source and driver 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.

### Options and Accessories

**Flangeless mud-in ring:** Use **CA4RFT** for use with flangeless plaster installations.

**Sloped ceilings:** Compatible with sloped ceiling adapters (see **SCA** spec sheet).

### ENERGY STAR® exceptions

- 500lm, 90CRI & all Wall wash configurations
- Champagne Bronze & Black finishes
- Dali, ELV & EldoLED Solo drivers

### Title 24 exceptions

- 1000lm in Downlight, Wall Wash & Lensed Wall Wash configurations
- Champagne Bronze & Black finishes

### Labels and Listings

- cULus listed for wet locations
- ENERGY STAR® certified
- RoHS certified
- CEC Title 24 JA8 certified

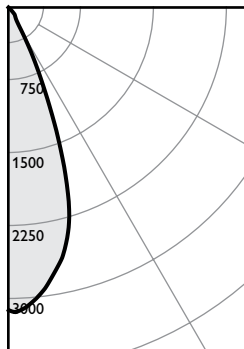
### Warranty



5 year limited warranty  
Visit [Signify.com/warranties](http://Signify.com/warranties) for more information on Signify's standard 5-year limited warranty on complete luminaire systems.

### Narrow beam, 1500lm Engine, 103.8 lm/W

#### Candela Curve



Frame: **C4RN or 4RN**  
Engine: **C4L15835NZ10U**  
Trim: **C4RDLCL**

Output lumens: 1526 lms  
Input watts: 14.7 W  
CRI: 80 min  
CCT<sup>1</sup>: 3500K  
Spacing Crit.: 0.6  
Beam Angle: 43°

#### Zonal summary

Zone	Lumens	%Luminaire
0-30	1354	88.7%
0-40	1469	96.3%
0-60	1526	100.0%
0-90	1526	100.0%

Angle	Mean CP	Lumens
0	3112	
5	3044	282
10	2785	
15	2410	652
20	1672	
25	837	420
30	324	
35	163	115
40	128	
45	77	57
50	0	
55	0	0
60	0	
65	0	0
70	0	
75	0	0
80	0	
85	0	0
90	0	

#### Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	124	3.0'
6'	86	3.6'
7'	64	4.2'
8'	49	4.8'
9'	38	5.4'

\* 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'	71.3	0.65
6'	46.8	0.43
7'	33.4	0.31
8'	27.8	0.25
9'	22.3	0.20

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

**Efficacy: 103.8 lm/w**  
Report<sup>2</sup>: T20161390

#### Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 107%	3000lm = 200%
CC = 95%	80CRI 3500K = 100%	2500lm = 167%
CD = 87%	80CRI 3000K = 99%	2000lm = 133%
CZ = 63%	80CRI 2700K = 93%	1500lm = 100%
WH = 87%	90CRI 3000K = 87%	1000lm = 67%
BK = 57%	90CRI 2700K = 81%	500lm = 33%

#### Coefficients of utilization

Ceiling	80%				70%				50%				30%				0%
Wall	70	50	30	10	50	10	50	10	50	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	106	106	100	95	
1	114	112	110	108	110	106	106	106	103	102	100	95	102	100	95		
2	110	106	102	99	104	98	101	96	98	94	91	86	98	94	91		
3	105	100	96	92	99	92	96	90	94	89	86	82	94	89	86		
4	101	95	90	87	94	86	92	85	90	84	82	78	90	84	82		
5	97	90	85	82	89	81	88	81	86	80	78	74	86	80	78		
6	93	86	81	77	85	77	84	77	83	76	74	70	82	76	74		
7	90	82	77	74	81	73	80	73	79	73	71	68	79	73	71		
8	86	79	74	70	78	70	77	70	76	69	68	65	76	69	68		
9	83	75	70	67	75	67	74	67	73	66	65	62	73	66	65		
10	80	72	67	64	72	64	71	64	70	64	62	60	70	64	62		

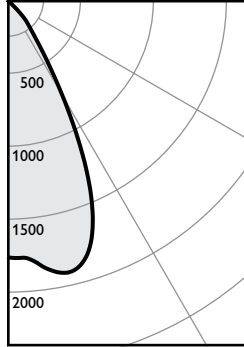
1. Correlated Color Temperature within specs as defined in ANSI\_NEMA\_ANSI C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.  
2. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State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

# C4RA Calculite LED 4" gen 3

## Round AirsSeal IC frame

### Medium beam, 1500lm Engine, 114.6 lm/W

#### Candela Curve



Frame: **C4RN or 4RN**  
Engine: **C4L15835MZ10U**  
Trim: **C4RDLCL**

Output lumens: 1627 lms  
Input watts: 14.2 W  
CRI: 80 min  
CCT<sup>1</sup>: 3500K  
Spacing Crit.: 0.9  
Beam Angle: 56°

#### Zonal summary

Zone	Lumens	%Luminaire
0-30	1269	78.0%
0-40	1537	94.5%
0-60	1627	100.0%
0-90	1627	100.0%

Angle	Mean CP	Lumens
0	1760	
5	1783	174
10	1886	
15	1887	524
20	1702	
25	1283	572
30	762	
35	406	268
40	236	
45	116	89
50	14	
55	0	1
60	0	
65	0	0
70	0	
75	0	0
80	0	
85	0	0
90	0	

#### Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	70	4.5'
6'	49	5.4'
7'	36	6.3'
8'	28	7.2'
9'	22	8.1'

\* 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'	74.8	0.63
6'	49.1	0.41
7'	35.0	0.30
8'	29.2	0.25
9'	23.4	0.20

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

**Efficacy: 114.6 lm/w**  
Report#: T20161397

#### Adjustment factors

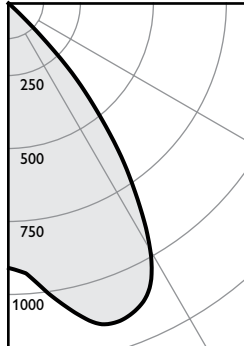
Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	3000lm = 200%
CC = 95%	80CRI 3500K = 100%	2500lm = 167%
CD = 87%	80CRI 3000K = 97%	2000lm = 133%
CZ = 63%	80CRI 2700K = 87%	1500lm = 100%
WH = 87%	90CRI 3000K = 77%	1000lm = 67%
BK = 57%	90CRI 2700K = 73%	500lm = 33%

#### Coefficients of utilization

Ceiling	80%				70%				50%				30%				0%
Wall	70	50	30	10	50	10	50	10	50	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	100	106	106	100	
	1	114	111	109	107	109	105	105	102	101	99	94	94	101	99	94	
	2	108	104	100	97	102	96	99	94	96	92	88	88	96	92	88	
	3	103	97	93	89	96	88	93	87	91	85	82	82	91	85	82	
	4	98	91	86	82	90	81	88	81	86	80	77	77	86	80	77	
	5	94	86	80	76	85	76	83	75	81	74	72	72	81	74	72	
	6	89	81	75	71	80	71	79	70	77	70	68	68	77	70	68	
	7	85	76	70	66	76	66	74	66	73	66	64	64	73	66	64	
	8	81	72	66	62	71	62	70	62	69	62	60	60	69	62	60	
	9	77	68	63	59	68	59	67	58	66	58	57	57	66	58	57	
	10	74	65	59	55	64	55	63	55	63	55	54	54	63	55	54	

### Wide beam, 1500lm Engine, 106.6 lm/W

#### Candela Curve



Frame: **C4RN or 4RN**  
Engine: **C4L15835WZ10U**  
Trim: **C4RDLCL**

Output lumens: 1517 lms  
Input watts: 14.2 W  
CRI: 80 min  
CCT<sup>1</sup>: 3500K  
Spacing Crit.: 1.2  
Beam Angle: 76°

#### Zonal summary

Zone	Lumens	%Luminaire
0-30	918	60.5%
0-40	1368	90.2%
0-60	1517	100.0%
0-90	1517	100.0%

Angle	Mean CP	Lumens
0	906	
5	945	93
10	1040	
15	1128	318
20	1153	
25	1114	506
30	978	
35	732	450
40	460	
45	175	148
50	18	
55	0	2
60	0	
65	0	0
70	0	
75	0	0
80	0	
85	0	0
90	0	

#### Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	36	6.0'
6'	25	7.2'
7'	18	8.4'
8'	14	9.6'
9'	11	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'	68.5	0.63
6'	45.0	0.41
7'	32.1	0.30
8'	26.8	0.25
9'	21.4	0.20

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

**Efficacy: 106.6 lm/w**  
Report#: T20161406

#### Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	3000lm = 200%
CC = 95%	80CRI 3500K = 100%	2500lm = 167%
CD = 87%	80CRI 3000K = 97%	2000lm = 133%
CZ = 63%	80CRI 2700K = 87%	1500lm = 100%
WH = 87%	90CRI 3000K = 77%	1000lm = 67%
BK = 57%	90CRI 2700K = 73%	500lm = 33%

#### Coefficients of utilization

Ceiling	80%				70%				50%				30%				0%
Wall	70	50	30	10	50	10	50	10	50	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	100	106	106	100	
	1	113	110	108	105	108	104	104	100	100	97	93	93	100	97	93	
	2	107	102	98	94	100	93	97	91	94	89	86	86	94	89	86	
	3	101	94	89	85	93	84	90	83	88	81	79	79	88	81	79	
	4	96	87	82	77	86	77	84	76	82	75	72	72	82	75	72	
	5	90	81	75	70	80	70	78	69	77	69	66	66	77	69	66	
	6	85	75	69	64	75	64	73	64	72	63	61	61	72	63	61	
	7	80	70	64	59	69	59	68	59	67	58	56	56	67	58	56	
	8	76	65	59	55	65	54	64	54	63	54	52	52	63	54	52	
	9	72	61	55	50	61	50	60	50	59	50	48	48	59	50	48	
	10	68	57	51	47	57	47	56	47	55	46	45	45	55	46	45	

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.

# C4RA Calculite LED 4" gen 3

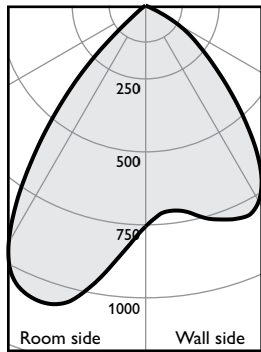
## Round AirsSeal IC frame

### Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	3000lm = 200%
CC = 95%	80CRI 3500K = 100%	2500lm = 167%
CD = 87%	80CRI 3000K = 97%	2000lm = 133%
CZ = 63%	80CRI 2700K = 87%	1500lm = 100%
WH = 87%	90CRI 3000K = 77%	1000lm = 67%
BK = 57%	90CRI 2700K = 73%	500lm = 33%

### Wall Wash, 1500lm Engine, 102.8 lm/W

#### Candela Curve



Frame: **C4RN or 4RN**  
Engine: **C4L15835WZ10U**  
Trim: **C4RWCL**

Output lumens: 1465 lms  
Input watts: 14.3 W  
CRI: 80 min  
CCT: 3500K

**Efficacy: 102.8 lm/w**  
Report#: T20161408

#### Multiple unit data

Footcandles on wall

	2' from wall			
	3' on ctr.			
Distance from ceiling in feet	1	3	2	3
2	38	21	38	
3	37	36	37	
4	30	32	30	
5	23	25	23	
6	19	19	19	
7	15	15	15	
8	13	13	13	
9	11	11	11	
10	10	10	10	
12	8	8	8	
14	7	7	7	

#### Multiple unit data

Footcandles on wall

	3' from wall			
	3' on ctr.			
Distance from ceiling in feet	1	2	2	2
2	2	2	2	2
3	21	19	21	
4	24	25	24	
5	24	25	24	
6	21	22	21	
7	18	19	18	
8	16	16	16	
9	14	14	14	
10	12	12	12	
12	10	10	10	
14	9	8	9	

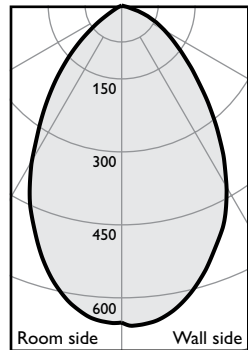
#### Multiple unit data

Footcandles on wall

	3' from wall			
	4' on ctr.			
Distance from ceiling in feet	1	2	2	2
2	2	2	2	2
3	18	16	18	
4	20	19	20	
5	18	19	18	
6	16	17	16	
7	14	15	14	
8	12	12	12	
9	11	11	11	
10	9	10	9	
12	8	8	8	
14	7	7	7	

### Lensed Wall Wash, 1500lm Engine, 71.1 lm/W

#### Candela Curve



Frame: **C4RN or 4RN**  
Engine: **C4L15835WZ10U**  
Trim: **C4RLWCL**

Output lumens: 1012 lms  
Input watts: 14.2 W  
CRI: 80 min  
CCT: 3500K

**Efficacy: 71.1 lm/w**  
Report#: T20161407

#### Multiple unit data

Footcandles on wall

	2' from wall			
	3' on ctr.			
Distance from ceiling in feet	1	5	2	5
2	29	26	29	
3	26	27	26	
4	22	22	22	
5	17	17	17	
6	13	13	13	
7	11	11	11	
8	9	9	9	
9	7	8	7	
10	7	6	7	
12	5	5	5	
14	5	5	5	

#### Multiple unit data

Footcandles on wall

	3' from wall			
	3' on ctr.			
Distance from ceiling in feet	1	2	2	2
2	10	15	10	
3	18	20	18	
4	19	19	19	
5	17	18	17	
6	15	15	15	
7	13	13	13	
8	11	11	11	
9	9	9	9	
10	8	8	8	
12	7	7	7	
14	6	6	6	

#### Multiple unit data

Footcandles on wall

	3' from wall			
	4' on ctr.			
Distance from ceiling in feet	1	2	1	2
2	9	12	9	
3	15	14	15	
4	14	15	14	
5	13	13	13	
6	11	12	11	
7	10	10	10	
8	9	9	9	
9	7	7	7	
10	6	6	6	
12	5	5	5	
14	5	5	5	

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.

