



EasyLyte downlights are adaptable, and flexible for your changing project needs. EasyLyte is your best choice without sacrificing ease of installation or product quality. Ideal for use in open office, healthcare, design build, and other light commercial applications.

Standard luminaire = Frame + Engine/Trim + Accessories (optional)

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

Frame

example: 4RN

Series	Aperture	Installation	Options
4	R		
4 Uniframe 4-inch	R Round	N New construction (Non-IC) R Remodeler (Non-IC) A AirSeal (IC) ¹	— Universal 120/277/347V ² LC Chicago Plenum ³ EM6 Emergency, 6W Self-Test/Self-Diagnostic (not available for BAC) ^{3,4} 3 347V (for non-Z10 configurations) RADIO Integral Interact-enabled RF sensor (120/277/347V) (enables wireless connected lighting control) ^{3,5} requires above ceiling access

Engine / Trim

example: Z4RDL20935WOCZ10U

Series	Lumen	CRI/CCT	Beam	Style	Reflector	Flange	Dimming	Voltage
Z4RDL			W					
Z4RDL EasyLyte 4-inch Round downlight	05 500lm 10 1000lm 15 1500lm 20 2000lm 25 2500lm	927 90CRI / 2700K 930 90CRI / 3000K 935 90CRI / 3500K 940 90CRI / 4000K 950 90CRI / 5000K	W Wide	O Open S Step baffle	WH White BK Black DB Dark Bronze CD Clear Diffuse	— White (matte) BK Black (matte)	Z10 0-10V 1% L Lutron LDE1 EcoSystem (not avail. with 500lm) E ELV ⁶ P Power over Ethernet (PoE)	U 120/277V 3 347V ^{7,8} (Z10 only) U 120/277/347V 1 120V E Ethernet 48V DC

Accessories (learn more on page 2)

- SBA** Interact Ready System Bridge Accessory with integral occupancy and daylight sensor (compatible with all 0-10V options, see SBA spec sheet)⁹
- CAEM6** Field installable Bodine BSL6 6W battery pack with self-test/self-diagnostic for use with new construction (N) frames, 120-277V
- AMS** ActiLume multi-sensor (optional accessory for PoE configurations)
- CAEM6TSCP** Surface mount cover plate to remote mount test switch for EM6 frame option.

Sloped Ceiling

example: 7920MD

Series	Degree of Slope
7920 Sloped Ceiling Adapter 4"	MC 5° MF 20° MD 10° MG 25° ME 15° MH 30°

1. There is a 2000lm (20) limit with 4" (4RA) IC housings.
2. Universal 120-347V is for 0-10v (Z10) dimming configurations only.
For 347V non-Z10 dimming, order 347V (3) frame with (U) light engine/trim.
3. Interact Pro (RADIO), Emergency (EM6) and Chicago Plenum (LC) are only available with New construction (N) installs.
4. EM6 option compatible with new construction (N) frame only. Order CAEM6TSCP ceiling mounting plate accessory for remote mounted test switch. EM6 option not compatible with Power over Ethernet or 347V configurations.
5. Integral Interact-enabled RF sensor enables network lighting control; to be specified with 0-10V light engines only.
6. ELV (E) dimming is only compatible with 1000lm (10), 1500lm (15), 2000lm (20) configurations.
Not compatible with 347V frame options.
7. Specify standard UNV frame for use with 347V light engines.
8. The 347V light engine voltage option is available only with Z10 dimming option.
For other dimming protocols order (U) light engine and 347V (3) frame.
9. Requires IRT9015 IR remote & Interact Pro App for commissioning.



Z4RDL EasyLyte 4"

Round Downlight

Features

Optics

- Provides a 70° cutoff (physical and reflected)
- Wide beam distribution for general illumination
- Spun aluminum outer reflector with integral flange painted white
- Injection molded plastic trim inserts in splay and baffle options
- Reflectors available in painted clear diffuse, white, black and dark bronze

Quality of light

- Lumen Maintenance: L70 at 60,000 hours
- Color consistency: 2 SDCM
- 90 CRI minimum

Construction (New Construction)

- Galvanized stamped steel for dry / plaster ceilings.
- Pre-installed telescoping mounting bars (13" - 24")
- Frame accommodates C- channel, black iron, and 3/4" EMT for mounting distances greater than 24" between joists.
- Manufactured from 20 gage galvanized steel construction with rolled edge aperture to guide cutting tools for perfect hole cutting.

Max ceiling thickness is 1.5" (38 mm). Including PoE frame 4.88" (124 mm).

Patented install Mounting frame

- Pre-installed mounting bars allow for fast and tool-less install into T-grid and hat channel ceilings
- Close-cut aperture design eliminates an undesired gap between ceiling material and reflector.
- Simple plug-and-play connection between frame and light engine from below the ceiling allows for:
 - Easy upgrades
 - Technology changes
 - Repairs and troubleshooting

Dimming

120/277V

- Advance 0-10V 1% dimming
- Lutron Hi-lume EcoSystem H Series 1% dimming

347V

- Integral 347V drivers available for 0-10v (Z10) light engine configurations with standard universal frames.
- For 347V and non-0-10v dimming, order (U) light engine and 347V (3) frame (includes step down transformer). Not compatible with ELV dimming.

Emergency

Remote ceiling mounted test switch. Accessory ceiling mounting plate available (CAEM6TSCP) for remote mounted test switch. See Calculite-LyteProfile-EasyLyte Emergency Battery Pack specification sheet for more details.

Power over Ethernet

Powered via Philips PoE lighting controller: complies with FCC rules per Title 47 part 15 (Class A) for EMI / RFI (conducted & radiated). PoE lighting controller accessible from below ceiling.

Rated life: 60,000 hrs at 70% lumen maintenance based on IES LM-80-08 and TM-21-11.

Sloped Ceiling Adapter

Material: 16 ga. spun aluminum, matte white finish.

Installation: Installs with standard recessed fixture in sloped ceilings without changing the vertical axis of the fixture or its lighting characteristics.

Perforated Tabs (4): Provide temporary support for the slope ceiling adapter during installation.

Locking Screws (4): Secure slope ceiling adapter to mounting frame of fixture.

Support: Fixture must be supported by ceiling structure – not Slope Ceiling Adapter.

Options and Accessories

Field Installed Emergency: Refer to Calculite-Lyte-Profile-EasyLyte Emergency Battery Pack specification sheet for more details.

CAEM6: Field install EM6 kit with Bodine BSL6 6W battery pack with self-test/self-diagnostic, mounts to new construction frame. Includes ceiling plate for remote test switch.

CAEM6TSCP: Ceiling cover plate for remote mounted EM6 test switch. 1" (25mm) hole, 4 3/8" (109mm) x 2 3/8" (69mm) rectangular. Includes two mounting screws.

Labels and Listings

- cULus listed for wet location
- RoHS certified
- Consult factory for Buy America Compliance

Warranty



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

Finishes



White

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



Black

Specular finish that provides the lowest aperture brightness possible and reduces source identification in a ceiling significantly.



Dark Bronze

Specular finish that provides the lowest aperture brightness possible and reduces source identification in a ceiling significantly.



Clear diffuse

Slightly diffuse clear finish that softens the light and reduces the mirror image effect with traditional aluminum specular finishes (only available with a white flange).

Z4RDL EasyLyte 4"

Round Downlight

interact

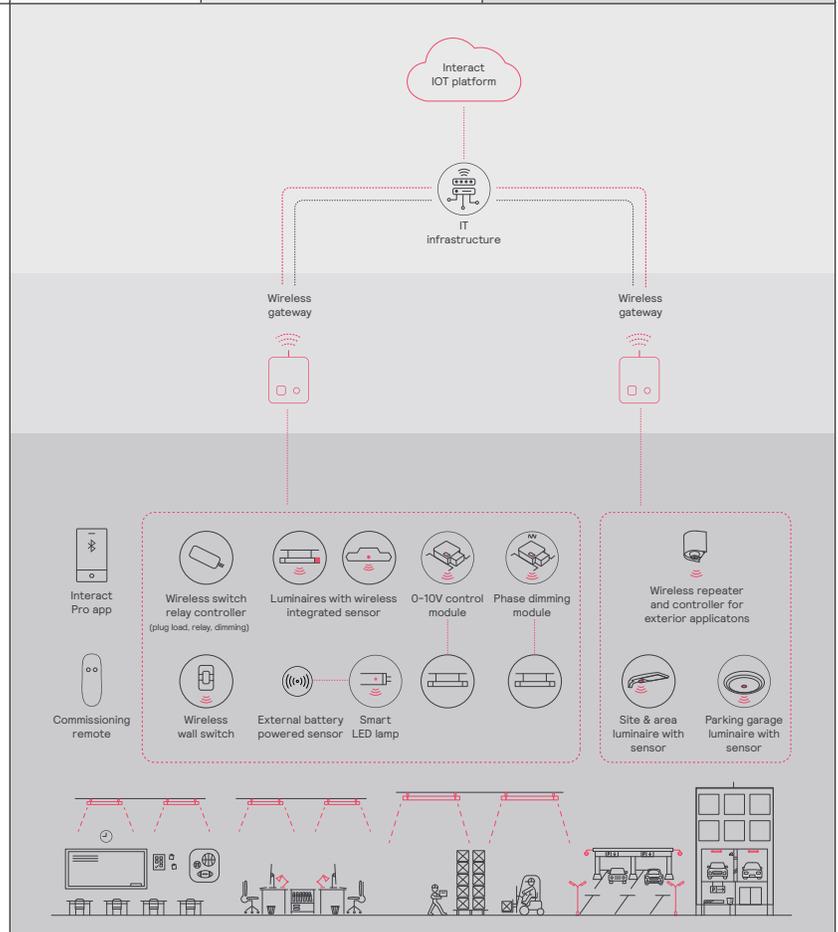
	Gateway Connected		
	Standalone	Option 1	Option 2
Dimming, grouping, and zoning	✓	✓	✓
Bluetooth and ZigBee enabled	✓	✓	✓
Motion sensing and daylight harvesting	✓	✓	✓
Integration with 0-10V and phase dimming fixtures	✓	✓	✓
Code compliance	✓	✓	✓
Granular dimming and dwell time	✓	✓	✓
Correlated color temperature (CCT) tuning by switch	New ✓	✓	✓
Support for sensor-based Tunable White luminaires	New ✓	✓	✓
Energy reporting and monitoring		✓	✓
Scheduling		✓	✓
Demand response		✓	✓
BMS integration (BACnet)			✓
Floor plan visualization			✓
IoT sensors for wellness			✓
IoT Apps for productivity			✓

Currently supported maximum system size

To be able to design the lighting system correctly for the customer, it is important to know the prime characteristics of the system, its possibilities and limitations.

System level	
Total number of gateways	Unlimited
Total number of devices	200 per network
• Luminaires with integrated sensors	150
• Smart TLEDS	150
• Zones + groups	64
Total number of ZGP devices (sensors and switches)	50
• Sensors	30
• Switches	50

Group level	
Recommended number of lights	40 (maximum 150)
Number of ZGP devices	5
Number of scenes	16



Z4RDL EasyLyte 4"

Round Downlight

Wireless controls options

Interact

- SWZCS is a connected sensor with integral occupancy and daylight sensing and supports wireless mesh connectivity.
- The sensor works in the standalone mode (similar to SpaceWise) when configured without a gateway or in a cloud connected mode if a compatible gateway is used.
- Interact includes an App, a portal and a broad portfolio of wireless luminaires, lamps and retrofit kits all working on the same system.
- Startup is implemented via Interact Pro App (Android or iPhone) & Bluetooth connectivity. The App provides flexibility to choose between a gateway or non gateway mode for setup.
- Setup with the gateway requires wired internet access to the gateway. It is possible to add a gateway at a later point.
- Prepare project configuration steps remotely and use IRT9015 remote on-site to identify and group devices together.

Compatible with:

- SWS200 & UID8465 wireless scene switch
- Battery powered IP42 presence sensor OCC sensor IA CM WH 10/1
- Battery powered IP42 presence & daylight sensor OCC-DL sensor IA CM IP42 WH
- LCN3110: battery powered IP65 presence sensor, OCC sensor IA CM IP65W
- LCN3120: battery powered IP65 presence & daylight sensor, OCC-DL sensor IA CM IP65 WH
- For more information on Interact visit: interact-lighting.com/interactproscalablesystem

Radio only sensor (RA or RADIO)

- Integral RA or RADIO only sensor simply enables wireless mesh connectivity to the luminaire without any occupancy or daylight sensing.
- Ideal for applications where sensing functionality is managed by other Interact devices and the luminaire only needs to have wireless connectivity.
- Interact includes an App, a portal and a broad portfolio of wireless luminaires, lamps and retrofit kits all working on the same system.
- Startup is implemented via Interact Pro App (Android or iPhone) & Bluetooth connectivity. The App provides flexibility to choose between a gateway or non-gateway mode for setup.
- Setup with the gateway requires wired internet access to the gateway. It is possible to add a gateway at a later point.
- Prepare project configuration steps remotely, identify and group devices together onsite.
- Compatible with SWS200 and UID8465 wireless scene switch, wireless Occ sensor (OCC SENSOR IA CM IP42 WH 10/1) and wireless Day/Occ sensor (OCC MULTI SENSOR IA CM WH 10/1).
- For more information on Interact visit: interact-lighting.com/interactproscalablesystem

Sensor bundle (IAOSB or SB)

- A wireless IoT connected lighting solution for large enterprises that span across multiple floors, buildings and require multiple gateways.
- View all your projects under one dashboard and easily compare insights from multiple projects in one view.
- Compatible with SWS200 wireless scene switch, wireless Occ sensor (OCC SENSOR IA CM IP42 WH 10/1) and wireless Day/Occ sensor (OCC MULTI SENSOR IA CM WH 10/1) and wireless Occupancy or Daylight & Occupancy sensors available. Use Interact software and insights to increase building efficiency, achieve building wide integration and optimize space through occupancy analytics.
- IAOSB or SB option in addition to occupancy and daylights sensing supports advanced IoT capabilities, such as people estimation analysis, desk level temperature & humidity sensing, noise classification, and BLE beacon.
- Requires compatible Gateway and internet connectivity for commissioning.
- For more information, visit: interact-lighting.com/interactproscalablesystem

Emergency Options (ER100)

- **Power Sensing** (factory default) – Recommended UL924 option requires unswitched power sense line, absence of voltage on the normal circuit triggers luminaire to 100% output.
- **Power Interruption Detection** (field option) – Detects AC power interruption >30ms triggers 90 minute emergency mode with luminaire at 100% output.

Wired controls options

Interact (PoE):

- PoE based IoT connected lighting solution for large enterprises that span across multiple floors, buildings and require multiple gateways.
- Use Interact software and insights to increase building efficiency, achieve building wide integration and optimize space through occupancy analytics.
- Test switch and indicator light mounted on side of chassis on one end.
- Supports advanced IoT Apps on Personal Control, Space Management, wayfinding, room/desk reservation and offers open APIs for light control and data exchange.
- Integral sensor option for occupancy sensing (PIR) and/or daylight harvesting available for additional energy savings.
- Optional integral emergency controller and battery pack provides 600lm nominal output.
- PoE lighting controller is accessible from below.
- Emergency battery has a 3 month pre-installed shelf life, and must be stored and installed in environments of 20C to 30C (-4F to 86F) ambient, and 45-85% relative humidity.
- For more information on Interact Office Wired, visit: interact-lighting.com/office or www.usa.lighting.philips.com/systems/system-areas/offices.

Interact supported sensor option codes across Genlyte product lines

	Evokit	Day-Brite	Ledalite	Lightolier
ZigBee + Bluetooth + Sensing	SWZCS	SWZCS	CS	SBA accessory (external)
ZigBee + Bluetooth	RADIO	RADIO	RA	RA
ZigBee + Bluetooth + Sensing + Environmental data	IAOSB	IAOSB	SB	SB
ZigBee + Highbay + Sensing	-	SWZCSH	-	-

Z4RDL EasyLyte 4"

Round Downlight



AccuRender Technology (CRI 90+)

The right light brings colors to life. Our new AccuRender technology helps ensure colors are rendered more accurately and consistently, while doing so as efficiently as CRI 80 products.



Standard CRI 80

Good color rendering and high efficacy



Standard CRI 90

Better color rendering and low efficacy



AccuRender

Best color rendering, color preference and high efficacy

Enjoy design flexibility

Full range of products and options:

- Available soon in across Lightolier portfolio for application flexibility
- Multiple color temperatures (CCTs) and lumen packages offered

Promote savings

High efficacy, with no penalty:

- Energy efficacy compares well to conventional 80 CRI
- Up to 25% more energy savings vs competitor 90 CRI¹
- Helps meet Title 24 requirements

Show your true colors

High color rendering:

- True to life colors to help energize your environment and render better flesh tones critical for healthcare hospitality and retail applications.
- R_a up to 94 CRI
- R₉ up to 67 CRI
- G_a up to 99 CRI
- C₉ up to 94 CRI
- R_r up to 92 TM-30
- R_{r,h1} up to 91 TM-30
- R₉ up to 100 TM-30
- R_{ca,h1} up to -5% TM-30

Achieve color balance

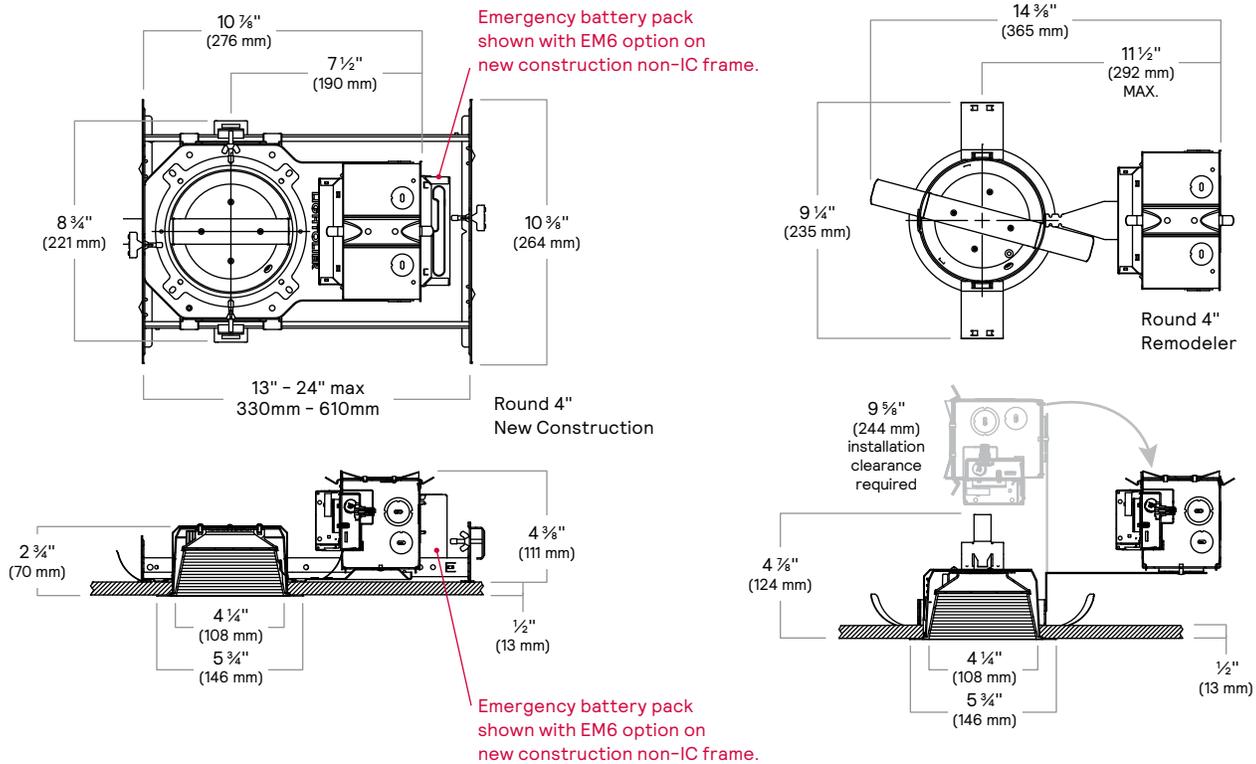
Best in class color consistency:

- Promote aesthetic harmony in your space with ≤ 2 SDCM

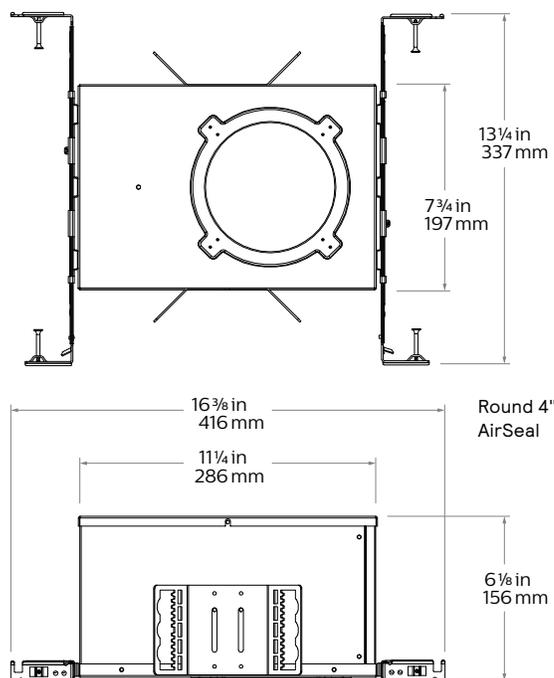
Z4RDL EasyLyte 4"

Round Downlight

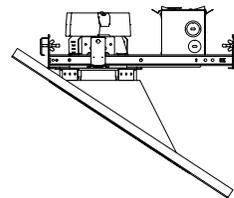
Dimensions



AirSeal (A)



Sloped Ceiling Adapter



Electrical

All have an input frequency of 50/60Hz

Light engine	Input volts	Input Current	Input Power	LED Drive Current	LED Power	THD Factor @ Max Load	Power Factor @ Max Load
Z4*05*	120V	0.050A	6.0W	0.15A	5.0W	<10%	>0.9
	277V	0.022A	6.1W	0.15A	5.0W	<15%	>0.9
	347V	0.021A	7.2W	0.15A	5.0W	<15%	>0.9
Z4*10*	120V	0.074A	8.9W	0.22A	7.4W	<10%	>0.9
	277V	0.033A	9.1W	0.22A	7.4W	<15%	>0.9
	347V	0.030A	10.3W	0.22A	7.4W	<15%	>0.9
Z4*15*	120V	0.113A	13.6W	0.33A	11.5W	<10%	>0.9
	277V	0.050A	13.9W	0.33A	11.5W	<15%	>0.9
	347V	0.044A	15.4W	0.33A	11.5W	<15%	>0.9
Z4*20*	120V	0.167A	20.0W	0.50A	17.2W	<10%	>0.9
	277V	0.072A	20.0W	0.50A	17.2W	<15%	>0.9
	347V	0.062A	21.5W	0.50A	17.2W	<15%	>0.9
Z4*25*	120V	0.216A	25.9W	0.64A	22.5W	<10%	>0.9
	277V	0.094A	25.9W	0.64A	22.5W	<15%	>0.9
	347V	0.078A	27.2W	0.64A	22.5W	<15%	>0.9

Z4RDL EasyLyte 4"

Round Downlight

Photometry

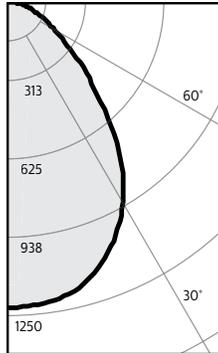
Reflector	Flux (lm)	Power (W)	Efficacy (lm/W)	CRI	R9	Beam Angle	Field Angle	Spacing Criterion
Open DL - Bronze	485	7.3	66.4	94	60	74°	108°	1.072
Open DL - Black	459	7.3	62.9	93	58	74°	107°	1.070
Open DL - White	660	7.3	90.5	93	56	79°	129°	1.130
Open DL - Clear Diffuse	653	7.3	89.5	93	56	83°	120°	1.178
Baffle - Black	390	7.3	53.4	93	59	74°	108°	1.073
Baffle - White	731	7.3	100.2	93	57	82°	140°	1.166
Open DL - Bronze	689	10.0	68.6	94	60	74°	108°	1.072
Open DL - Black	653	10.0	65.0	93	58	74°	107°	1.070
Open DL - White	939	10.0	93.4	93	56	79°	129°	1.130
Open DL - Clear Diffuse	928	10.0	92.4	93	56	83°	120°	1.178
Baffle - Black	554	10.0	55.1	93	59	74°	108°	1.073
Baffle - White	1039	10.0	103.5	93	57	82°	140°	1.166
Open DL - Bronze	1022	14.6	70.0	94	60	74°	108°	1.072
Open DL - Black	968	14.6	66.3	93	58	74°	107°	1.070
Open DL - White	1392	14.6	95.4	93	56	79°	129°	1.130
Open DL - Clear Diffuse	1376	14.6	94.3	93	56	83°	120°	1.178
Baffle - Black	821	14.6	56.3	93	59	74°	108°	1.073
Baffle - White	1541	14.6	105.6	93	57	82°	140°	1.166
Open DL - Bronze	1534	20.0	76.7	94	60	74°	108°	1.072
Open DL - Black	1453	20.6	70.6	93	58	74°	107°	1.070
Open DL - White	2089	20.6	101.4	93	56	79°	129°	1.130
Open DL - Clear Diffuse	2066	20.6	100.3	93	56	83°	120°	1.178
Baffle - Black	1233	21.3	57.9	93	59	74°	108°	1.073
Baffle - White	2313	20.6	112.3	93	57	82°	140°	1.166
Open DL - Bronze	1895	27.4	69.1	94	60	74°	108°	1.072
Open DL - Black	1796	27.4	65.5	93	58	74°	107°	1.070
Open DL - White	2581	27.4	94.1	93	56	79°	129°	1.130
Open DL - Clear Diffuse	2552	27.4	93.1	93	56	83°	120°	1.178
Baffle - Black	1523	27.4	55.5	93	59	74°	108°	1.073
Baffle - White	2858	27.4	104.2	93	57	82°	140°	1.166

Z4RDL EasyLyte 4"

Round Downlight

Downlight, Wide beam, 2300lm Engine, 112lm/W at 21W

Candela Curves



Frame: 4RN
Engine / Trim:
Z4RDL20935WSWHZ10U

Output lumens: 2314 lms
Input watts¹: 20.6 W
CRI: 90 min
CCT²: 3500K
Beam Angle: 79°
Spacing Crit.: 1.14

Zonal summary

Zone	Lumens	%Luminaire
0-30	909	39.3%
0-40	1401	60.5%
0-60	2037	88.0%
0-90	2314	100.0%

Angle	Mean CP	Lumens
0	1214	
5	1208	115
10	1194	
15	1162	327
20	1101	
25	1020	468
30	918	
35	791	492
40	645	
45	491	383
50	378	
55	278	253
60	209	
65	161	161
70	120	
75	84	89
80	51	
85	24	27
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	49	5.7'
6'	34	6.8'
7'	25	8.0'
8'	19	9.1'
9'	15	10.3'

* 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'	97.0	0.91
6'	64.0	0.60
7'	46.0	0.43
8'	38.0	0.36
9'	30.0	0.29

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

Efficacy: 112.3 lm/w
Report#: STMR-522-I

Coefficients of utilization

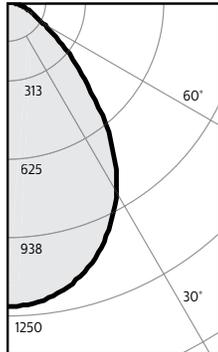
Ceiling	80%				70%		50%		30%		0%	
	70	50	30	10	50	10	50	10	50	10	0	
Wall	70	50	30	10	50	10	50	10	50	10	0	
RCR	Zonal cavity method - Effective floor reflectance = 20%											
Room Cavity Ratio	0	119	119	119	119	116	116	111	111	106	106	100
	1	111	107	103	100	105	99	100	95	97	93	88
	2	103	96	90	85	94	84	90	82	87	80	77
	3	95	86	79	74	84	73	82	72	79	70	67
	4	88	78	70	64	76	64	74	63	72	62	60
	5	82	71	63	57	70	57	67	56	66	55	53
	6	76	64	57	51	64	51	62	50	60	50	48
	7	71	59	51	46	58	46	57	45	56	45	43
	8	67	54	47	41	54	41	53	41	51	41	39
	9	63	50	43	38	50	38	49	38	48	37	36
	10	59	47	40	35	46	35	45	35	44	34	33

Adjustment factors

Finish
WH = 100%
BK = 54%

Downlight, Wide beam, 2100lm Engine, 102lm/W at 21W

Candela Curves



Frame: 4RN
Engine / Trim:
Z4RDL20935WOWHZ10U

Output lumens: 2090 lms
Input watts¹: 20.6 W
CRI: 90 min
CCT²: 3500K
Beam Angle: 82°
Spacing Crit.: 1.1

Zonal summary

Zone	Lumens	%Luminaire
0-30	1181	40.7%
0-40	1816	62.6%
0-60	2609	90.0%
0-90	2900	100.0%

Angle	Mean CP	Lumens
0	1215	
5	1205	114
10	1177	
15	1130	318
20	1063	
25	977	448
30	871	
35	742	461
40	593	
45	439	343
50	323	
55	223	204
60	157	
65	116	117
70	88	
75	62	66
80	38	
85	18	20
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	49	5.5'
6'	34	6.6'
7'	25	7.7'
8'	19	8.8'
9'	15	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'	89.0	0.91
6'	58.0	0.60
7'	42.0	0.43
8'	35.0	0.36
9'	28.0	0.29

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

Efficacy: 101.5 lm/w
Report#: STMR-531-I

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	111	107	103	100	105	99	101	96	97	93	88
	2	103	96	90	85	94	84	91	83	87	81	77
	3	95	86	79	74	85	73	82	72	79	71	68
	4	88	78	71	65	77	64	74	64	72	63	60
	5	82	71	63	57	70	57	68	57	66	56	54
	6	77	65	57	51	64	51	62	51	61	50	48
	7	72	60	52	46	59	46	57	46	56	46	44
	8	67	55	47	42	54	42	53	42	52	42	40
	9	63	51	43	38	50	38	49	38	48	38	36
	10	59	47	40	35	47	35	46	35	45	35	33

Adjustment factors

Finish
WH = 100%
CD = 98%
DB = 73%
BK = 70%

1. Wattage: controlled to within 5%
2. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSI 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.