

Recessed

DuaLED 2x2

**2DLG** up to 4400 lumens



Day-Brite / CFI DuaLED recessed is a highly efficient, visually comfortable, architecturally styled recessed LED luminaire, designed with a minimalistic strategy to achieve sustainable objectives. Its clean, modern design offers a fresh variation on the popular dual chamber theme and provides architectural styling compatible with virtually any area. SpaceWise Technology for selected applications is optional for additional energy savings and control.

Project:	
Location:	
Cat.No:	
Туре:	
Lamps:	Qty:
Notes:	

#### Ordering guide - standard & wireless controls

Standard configurations available with all choices, unless otherwise noted. Base configurations selections indicated by blue.

Width Family	Ceiling Type	Lumens (nominal delivered)	Colo	r	Length		enter iffuser	Voltage	!	Drive	r	Options	
2 DL	G			_	2 -		_		-		_		
2 2' DL DUALED	<b>G</b> Grid	Base configuration 40B 4000  Standard configurations 27L 2700 30L 3000 34L 3400 38L 3800 44L 4400  Other lumen packages may be ordered in increments of 100lm from 2700 to 4400 lumens	830 835 840 850	80 CRI, 3000K 80 CRI, 3500K 80 CRI, 4000K 80 CRI, 5000K	2 2'	D	Diffuse (opal)	UNV 347	Universal voltage 120-277V 347V	DIM 1 LDE 2 DALI SDIM	Dimming Lutron LDE5, 5% dimming DALI dimming Step dimming to 40% input power	F1 F2 F1/D F2/5W GLR EMLED EMLED7 DSC CHIC ER100 <sup>3,4,6,7</sup>	3/8 3/8 dir 3/8 dir Fu: Bo dri Bo en Qu Ch UL ins

#### **Footnotes**

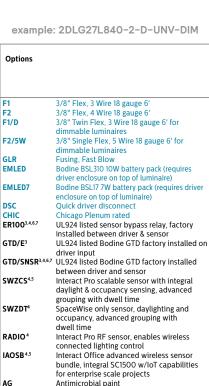
- 1 Integral controls options dimmable to 5% via wireless wall switch. Non-controls options are 0-10v dimmable to 1% for Standard configurations, and 10% for Base configurations.
- 2 LDE option available only on 27L, 34L, 38L, and 44L lumen packages.
- 3 Not available in 347V.
- 4 Specify only with -DIM driver option.
- 5 Must order IRT9015 Interact commissioning remote with each system order.
- 6 Must be ordered with an integral controls option.
- 7 Must be installed in conjunction with a UL1008 device.

#### SpaceWise (SWZCS) accessories (order separately)

• IRT9015 - handheld remote for grouping and configuration (at least one remote required for any SWZCS installation)

#### Other accessories (order separately)

- FMA22 2'x2' "F" mounting frame for NEMA "F" mounting
- FSK22 2'x2' surface mount field installation kit (welded seams, not available with emergency options)
- FSF22 2'x2' surface mount field assembly kit (field assembled, not available with emergency options)











### up to 4400 lumens

#### **Application**

- A highly efficient, visually comfortable, architecturally styled recessed LED luminaire designed with a minimalistic strategy to achieve sustainable objectives.
- Low profile configuration is only 2-11/16" high and is compatible with virtually any plenum.
- Clean, modern design offers a fresh variation on the popular dual chamber theme and provides architectural styling compatible with virtually any area.
- Soft opal diffusers with large luminous area minimize apparent brightness and provide high visual comfort perfect for a wide variety of general lighting applications like offices, schools, retail,
- or healthcare.
- Multiple lumen packages over a wide range provide significant application flexibility over light levels and/or luminaire spacing.
- A high lumen package can be used in conjunction with wide luminaire spacing to reduce luminaire quantities and overall cost while maintaining good uniformity.
- High efficiency source and luminaire design create significant energy savings over conventional solutions. Recommended light levels can frequently be achieved with lighting power densities of 0.5 to 0.85 Watts per square foot, complying with any known energy code.
- Directs a controlled amount of light to the higher angles in the room to balance the brightness of the surfaces and eliminate "cave effect" while creating the impression of a larger, brighter space without glare.
- Excellent color rendering with a CRI of 80.
- LEDs are an excellent source for use with controls since dimming or frequent switching does not degrade the performance or life of the source.
   Integral or external sensors are available for use.
- Designed for use with standard Grid (NEMA "G") or Narrow Grid (NEMA "NFG") ceiling T-bars.
   Drywall or plaster requirements can be accommodated by using an FMA22 "F" mounting frame (sold separately.)

- Listed for use in non-insulated ceilings (Type Non-IC).
- Some DuaLED luminaires are DesignLights
   Consortium® qualified. Please see the DLC QPL
   list for exact catalog numbers, www.designlights.
   org/QPL.
- EMLED is NOT DLC qualified.

#### Contruction/Finish

- Uncomplicated design is well under 3" in depth and only requires a few parts outside of the electrical system and hardware, creating several benefits:
  - Less material required
  - Less packaging required
  - Reduced weight
  - Less energy required for construction and assembly
  - More luminaires can be shipped per truck to reduce fuel use and emissions
- Luminaire is painted after fabrication with a matte white polyester powder coating for a high quality, durable finish with no unfinished edges to create an installation hazard or potential for corrosion.
- T-bar grid clips are included for easy installation.

#### **Electrical**

- Integral sensor options for occupancy sensing and/or daylight harvesting are available for additional energy savings with no reduction of life or increase in installation labor.
- Total luminaire efficacy as high as 118 LPW (lumens per Watt) significantly reduces energy usage compared to conventional 2x2 sources.
- Driver and LED boards are easily accessible from below without tools. Multiple LED boards are individually replaceable if needed via plug-in connectors to ensure long service life.
- 0-10v dimming to 1% for Standard configurations, and 5% for Base configurations.
- Emergency options are available to add even more application flexibility. Emergency models require a top mounted driver enclosure or a metal can emergency driver mounted to the housing/top enclosure that increases luminaire depth.

- 5 year manufacturer's limited warranty.
   Visit signify.com/warranties for complete warranty information.
- Predicted L70 lumen maintanance up to 70,000 hours for Standard configurations and 50,000 hours for Base configurations.
- To estimate lumen output in emergency mode, multiply emergency pack wattage by luminaire efficacy, then by 1.10. Typical lumen output is 1300lm for EMLED and 850lm for EMLED7.
- The GTD/E option is used to bypass wall switches and allow luminaire operation on auxiliary power.
   Generator transfer requires installation in conjunction with a UL1008 listed device.
- The GTD/SNSR option is used to bypass integrated sensor control in the event of utility power loss. Generator transfer requires installation in conjunction with a UL1008 listed device.
- cETLus listed to UL and CSA standards. Standard DuaLED suitable for damp locations.

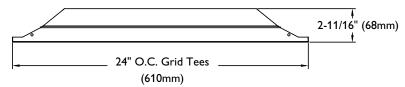
#### **Enclosure**

- Dual chamber configuration utilizes two diffusers with large surface area for brightness control.
- Opal diffusers provide soft, comfortable lighting while maintaining high efficiency.
- Diffusers require no frames or fasteners and can be easily removed from below without tools if needed.

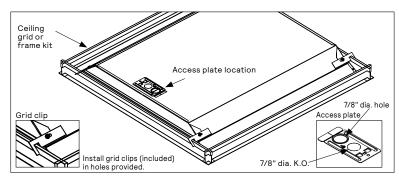
#### **General Notes**

- · All options factory installed.
- · All accessories are field installed.
- Many luminaire components, such as reflectors, refractors, lenses, sockets, lampholders, and LEDs are made from various types of plastics which can be adversely affected by airborne contaminants. If sulfur based chemicals, petroleum based products, cleaning solutions, or other contaminants are expected in the intended area of use, consult factory for compatibility.

#### **Dimensions**



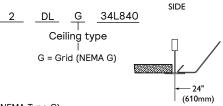
\* EMLED and EMLED7 are 1-3/4" (45mm) deeper



**Energy Data** 

Luminaire	Catalog Number	Input Power	Efficacy
2x2 Standard	2DLG27L840	22	126
	2DLG34L840	27	129
	2DLG38L840	31	126
	2DLG44L840	36	124
2x2 Base	2DLG40B840	34	126

#### **Ceiling Configuration**



(NEMA Type G)
Lay-in acoustical ceilings using exposed gridsuspension, with tees for luminaires on 24" x 24" spacing.

### up to 4400 lumens

# Wireless Controls Options

#### SpaceWise DT (SWZDT)

- Standalone daylight and occupancy sensing with advanced grouping, wireless mesh networking and dwell time.
- Commissioning via compatible Android phone and Philips Field App
- Dimming via compatible Zigbee wireless wall switch only (see link below for details)
- Register for the commissioning app at http:// registration.componentcloud.philips.com/ appregistration/
- · Integral sensing options may not be combined
- For more information including recommended switches, refer to the following: -

**SWZDT -** www.usa.lighting.philips.com/systems/lighting-systems/spacewise

#### **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

# DuaLED shown with integral sensor



SWZDT sensor shown

# Interact Pro scalable sensor for Foundation, Advanced & Enterprise tiers (SWZCS and an evolution of SpaceWise)

- SWZCS is a connected sensor with integral occupancy and daylight sensing and supports wireless mesh connectivity.
- The sensor works in the Foundation mode (similar to SpaceWise) when configured without a gateway or in an Interact Pro Advanced or Enterprise mode if a compatible gateway is used.
- Interact Pro 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 onsite to identify and group devices together.
- · Compatible with:
- SWS200 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 IP65WH
- -LCN3120: Battery powered IP65 presence & daylight sensor, OCC-DL sensor IA CM
- For more information on Interact Pro visit: www.interact-lighting.com/ interactproscalablesystem

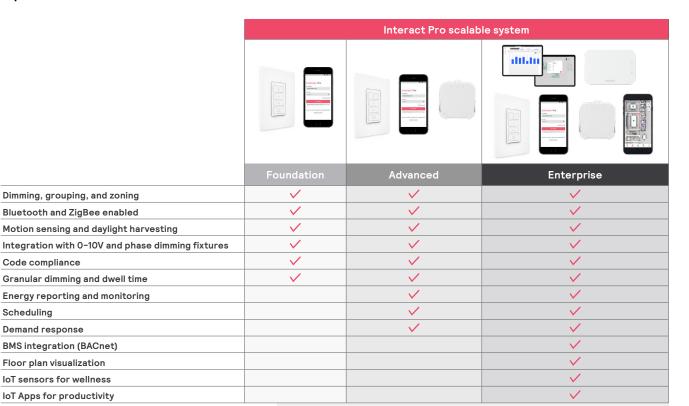
#### Radio only sensor (RADIO)

- Integral 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 Pro scalable sensor bundles for Enterprise tier

- IAOSB option in addition to occupancy and daylight sensing supports advanced IoT capabilities such as people estimation analysis, desk level temperature & humidity sensing, noise classification, and BLE beacon.
- Compatible with SWS200 wireless scene switch and Interact Ready wireless battery powered sensors.
- Use Interact software and insights to increase building efficiency, achieve building wide integration and optimize space through occupancy analytics.
- Requires compatible Gateway and internet connectivity for commissioning.
- For more information, visit:
   www.interact-lighting.com/office or
   www.usa.lighting.philips.com/systems/system areas/offices

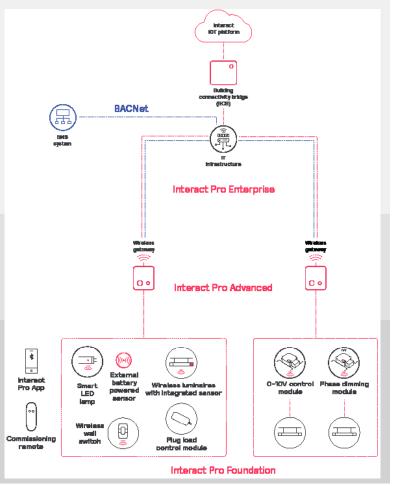
### up to 4400 lumens



#### 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
<ul> <li>luminaires with integrated sensors</li> </ul>	150
• smart TLEDS	150
Total number of ZGP devices (sensors and switches)	50
• sensors	30
• switches	50
zones and groups	64
Group level	
Recommended number of lights	40 (recommended 25)
Number of ZGP devices	5
Number of scenes	16



25

**35** 1095

45

55

**65** 491

**75** 257

85

914

1250

1104

930

732

262

71

1258

1119

747

519

264

### up to 4400 lumens

#### **Photometry**

#### 2x2 DuaLED, 4000 nominal delivered lumens

 Catalog No.
 2DLG40B840-2-D-UNV

 Test No.
 37668

S/MH 1.2 Lamp Type LED Lumens/Lamp 4010 Input Watts 34

Comparative yearly lighting energy cost per 1000 lumens – \$2.03 based on 3000 hrs. and \$.08 pwr KWH.

The photometric results were obtained in the Day-Brite laboratory which is NVLAP accredited by the National Institute of Standards and Technology.

Photometric values based on test performed in compliance with LM-79.

#### LER - 118

Candela distribution					Light Di	Light Distribution			
Vertical		Horizon	tal Angle		Degrees	Lumens	% Luminair		
Angle	0°	45°	90°	-45°	0-30	1092	27.2		
0	1413	1413	1413	1413	0-40 0-60	1784 3154	44.5 78.7		
5	1407	1405	1407	1405	0-90	4009	100.0		
15	1352	1352	1357	1352					

1250

1104

930

732

262

71

Averag	Average Luminance				
Angle	End	45°	Cross		
45	4692	4777	4872		
55	4493	4634	4732		
65	4216	4400	4461		
75	3606	3673	3704		
85	3079	2967	3067		

#### Coefficients of Utilization

EFFECTIVE FLOOR CAVITY REFLECTANCE 20 PER (pfc=0.20)

Ceiling (pcc)		80%			70%		50	)%
Wall (pw)	70	50	30	70	50	30	50	30
RCR	7	Zonal cav	ity metho	od - Effec	tive floo	r reflecta	nce = 20%	6
0	118	118	118	115	115	115	111	111
o 1	109	104	98	106	102	97	96	93
₩ 2	98	90	82	95	88	81	84	80
æ 3	90	79	70	86	78	69	75	68
.≩ 4	81	69	60	80	68	60	66	58
æ 5	76	63	54	73	61	53	58	52
Room Cavity Ratio 8 4 9 5 4 8 5 7	69	56	46	68	55	46	54	46
5 7	65	51	41	63	50	41	48	40
₽ 8	59	46	38	58	46	38	45	36
<u> </u>	56	42	34	55	41	34	40	34
10	53	39	32	51	39	30	38	30

#### 2x2 DuaLED, 3400 nominal delivered lumens

Catalog No. 2DLG34L840-2-D-UNV-DIM

 Test No.
 35427

 S/MH
 1.3

 Lamp Type
 LED

 Lumens/Lamp
 3450

 Input Watts
 29.3

Comparative yearly lighting energy cost per 1000 lumens – \$2.03 based on 3000 hrs. and \$.08 pwr KWH.

The photometric results were obtained in the Day-Brite laboratory which is NVLAP accredited by the National Institute of Standards and Technology.

Photometric values based on test performed in compliance with LM-79.

#### Candela distribution

Horizontal Angle						
0°	45°	90°	-45°			
1186	1186	1186	1186			
1182	1181	1182	1181			
1145	1143	1147	1143			
1058	1062	1069	1062			
935	945	958	945			
784	799	813	799			
609	628	641	628			
421	439	442	439			
236	238	238	238			
68	63	65	63			
	1186 1182 1145 1058 935 784 609 421 236	0° 45° 1186 1186 1182 1181 1145 1143 1058 1062 935 945 784 799 609 628 421 439 236 238	0' 45' 90' 1186 1186 1186 1182 1181 1182 1145 1143 1147 1058 1062 1069 935 945 958 784 799 813 609 628 641 421 439 442 236 238 238			

### Light Distribution Degrees Lumens % Lu

**LER - 117** 

egrees	Lumens	% Luminaire
0- 30	925	26.8
0-40	1516	43.9
0-60	2692	78.0
0-90	3451	100.0

Average Lammance					
Cross					
4177					
4058					
3802					
3337					
2725					

Average Luminance

#### Coefficients of Utilization

EFFECTIVE FLOOR CAVITY REFLECTANCE 20 PER (pfc=0.20)

					4			
Ceiling (pcc)		80%			70%		50	)%
Wall (pw)	70	50	30	70	50	30	50	30
RCR	7	Zonal cav	ity metho	od - Effe	tive floo	r reflecta	nce = 209	6
Room Cavity Ratio 6 8 2 9 5 7 8 2 7 1 0	118 108 97 90 81 75 69 64 59 56	118 104 90 79 69 61 56 51 46 42 39	118 98 82 70 60 53 46 41 38 34 30	115 106 95 86 80 72 68 63 57 55	115 101 88 77 68 60 55 50 46 41	115 96 81 69 59 53 46 41 36 34	111 96 84 73 66 58 53 47 44 40 38	111 93 79 68 58 52 46 40 36 33 30

### up to 4400 lumens

#### 2x2 DuaLED, 3800 nominal delivered lumens

Catalog No.	2DLG38L840-2-D-UNV-DIM
Test No.	35428
S/MH	1.3
Lamp Type	LED
Lumens/Lamp	3849
Input Watts	32.9

Comparative yearly lighting energy cost per 1000 lumens – **\$2.05** based on 3000 hrs. and \$.08 pwr KWH.

The photometric results were obtained in the Day-Brite laboratory which is NVLAP accredited by the National Institute of Standards and Technology.

Photometric values based on test performed in compliance with LM-79.

#### **LER - 117**

Candela distribution									
/ertical	Horizontal Angle								
Angle	0°	45°	90°	-45°					
0	1323	1323	1323	1323					
5	1319	1317	1319	1317					
15	1277	1276	1279	1276					
25	1181	1185	1192	1185					
35	1044	1054	1068	1054					
45	875	891	907	891					
55	680	700	716	700					
65	470	490	495	490					
75	264	266	267	266					
85	76	71	73	71					

Light Dis	Ave	Average Luminance					
Degrees	Lumens	% Luminaire	Ang	gle	End	45°	Cross
0- 30	1032	26.8		45	4492	4574	4659
0-40	1692	43.9		55	4302	4431	4532
0-60	3003	78.0		65	4040	4206	4250
0-90	3850	100		75	3699	3734	3742
				85	3171	2958	3054

#### Coefficients of Utilization

EFFECTIVE FLOOR CAVITY REFLECTANCE 20 PER (pfc=0.20)

Ceiling (pcc)	ling (pcc) 80%			70%			50%	
Wall (pw)	70	50	30	70	50	30	50	30
RCR	Zonal cavity method - Effective floor reflectand						nce = 20%	6
Room Cavity Ratio	118 108 97 90 81 75 69 64 59 56	118 104 90 79 69 61 56 51 46 42 39	118 98 82 70 60 53 46 41 38 34	115 106 95 86 80 72 68 63 57 55	115 101 88 77 68 60 55 50 46 41 39	115 96 81 69 59 53 46 41 36 34	111 96 84 73 66 58 53 47 44 40 38	111 93 79 68 58 52 46 40 36 33 30

#### 2x2 DuaLED, 4400 nominal delivered lumens

Catalog No.	2DLG44L840-2-D-UNV-DIM				
Test No.	35429				
S/MH	1.3				
Lamp Type	LED				
Lumens/Lamp	4670				
Input Watts	40.9				

Comparative yearly lighting energy cost per 1000 lumens – **\$2.07** based on 3000 hrs. and \$.08 pwr KWH.

The photometric results were obtained in the Day-Brite laboratory which is NVLAP accredited by the National Institute of Standards and Technology.

Photometric values based on test performed in compliance with LM-79.

### **LER - 114**

Candela	a distril	Light Dis	stributio			
Vertical		Horizon	Degrees	Lumens		
Angle	0°	45°	90°	-45°	0-30	1252
0	1603	1603	1603	1603	0-40 0-60	2052 3641
5	1598	1598	1600	1598	0-90	4668
15	1548	1548	1553	1548	1	
25	1430	1438	1447	1438		
35	1264	1278	1296	1278		
45	1059	1081	1101	1081	Coeffici	ents of
55	824	850	870	850	EFFECTIVI	FLOOR (
65	571	596	601	596	Cailing (n	

325

87

319

325

87

324

90

#### **Light Distribution**

egrees	Lumens	% Luminaire	A	ngle	End	45°	Cross
0- 30	1252	26.8		45	5436	5546	5651
0-40	2052	44.0		55	5212	5377	5500
0-60	3641	78.0		65	4901	5113	5161
0-90	4668	100.0		75	4475	4553	4535
				85	3880	3618	3730

Average Luminance

#### f Utilization

CAVITY REFLECTANCE 20 PER (pfc=0.20)

Ceiling (pcc)		80%			70%		50	)%		
Wall (pw)	70	50	30	70	50	30	50	30		
RCR	2	Zonal cavity method - Effective floor					eflectance = 20%			
Room Cavity Ratio 6 8 4 9 9 5 7 8 2 1 0	119 108 98 90 82 75 70 64 60 56	119 104 90 79 70 62 56 51 46 43 39	119 99 83 71 61 53 47 42 38 34 31	116 106 96 87 80 73 68 63 58 55	116 101 88 77 69 61 55 50 46 42 39	116 97 82 70 60 53 47 42 37 34 31	111 97 85 74 66 59 53 48 44 41 38	111 94 79 68 59 52 46 41 37 33		



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