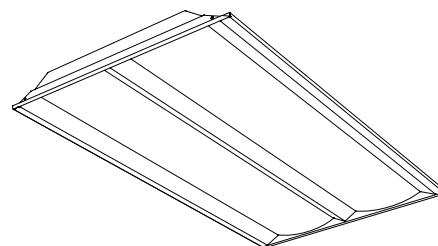


# Architectural style with efficiency and visual comfort

## DUALED RECESSED LED 2X4



DESIGNLIGHTS CONSORTIUM



PHILIPS DAY-BRITE / PHILIPS CFI DUALED RECESSED LED 2x4 WITH SPACEWISE TECHNOLOGY OPTION

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Catalog No: \_\_\_\_\_  
 Fixture Type: \_\_\_\_\_  
 Mfg: \_\_\_\_\_  
 Notes: \_\_\_\_\_

DuaLED 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 is optional for additional energy savings and control.

### Ordering guide

example: 2DLG49L840-4-D-UNV

Width	Family	Ceiling Type	Lumen Package	Color	Length	Diffusers	Voltage	Options
2	DL	G			4	D	UNV	
2 2'	DL DuaLED	G Grid	<b>43L</b> 4300 nominal delivered lumens <b>49L</b> 4900 nominal delivered lumens <b>58L</b> 5800 nominal delivered lumens <b>73L</b> 7300 nominal delivered lumens	<b>840</b> 80 CRI, 4000K <b>835</b> 80 CRI, 3500K	4 4'	D Diffuse (Opal)	<b>UNV</b> Universal voltage, 120-277 volt <b>347<sup>2</sup></b> 347 volt	<b>CC</b> Custom color <b>F1</b> 3/8" Flex, 3 Wire 18 gauge <b>F2</b> 3/8" Flex, 4 Wire 18 gauge <b>GLR1</b> Fusing, Fast Blow <b>DIM</b> 0-10V dimming driver <b>EMLED16<sup>2</sup></b> Integral emergency battery pack (1600 lumens, requires ballast enclosure on top of luminaire) <b>OCC<sup>3</sup></b> Integral sensor, occupancy <b>DAY<sup>4</sup></b> Integral sensor, daylighting <b>SWZ<sup>5, 6</sup></b> SpaceWise automated wireless technology for integrated occupancy and daylight harvesting

**Footnotes:**

- <sup>1</sup> Not available with the SWZ option
- <sup>2</sup> 347V not available with EMLED16.
- <sup>3</sup> OCC option allows individual auto shutoff per luminaire and is not recommended for applications with multiple luminaires.
- <sup>4</sup> DAY option requires manual light level calibration.
- <sup>5</sup> SWZ option provides occupancy sensing suitable for rooms with multiple luminaires, along with daylight harvesting with auto-calibration. See page 2 for more information.
- <sup>6</sup> Must order SWZ-REMOTE with each system order.

### Accessories (order separately)

- **SWZ-REMOTE** – SpaceWise programming tool
- **LRM1743** – External sensor to increase occupancy coverage area of SpaceWise luminaire groups
- **FMA24** – 2'x4' "F" mounting frame for NEMA "F" mounting



PHILIPS Day-Brite

PHILIPS CFI

# DUALED RECESSED LED 2X4

## 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 to 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.
- 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 FMA24 "F" mounting frame (sold separately.)
- Listed for use in insulated ceilings (Type IC).
- DualLED luminaires are DesignLights Consortium® qualified.

## Construction/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
- 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 and emergency options are available to add even more application flexibility. Emergency models require a top mounted driver enclosure that increases luminaire depth.
- Five year luminaire warranty includes components, LED boards and driver (emergency driver and batteries have a three year warranty in models so equipped.)
- High efficiency LEDs have a minimum 50,000 hour rated life (L70). Predicted L70 lifetime based on LED manufacturer's supplied LM-80 data and in-situ laboratory testing
- ETL listed to UL and CSA standards. Standard DualLED suitable for damp locations. **SpaceWise is not 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.

## SpaceWise Technology (SWZ)

- Optional SpaceWise automated wireless technology provides integrated occupancy and daylight harvesting for additional control and energy savings with no reduction of life. Requiring no system re-wiring, SpaceWise technology is appropriate for retrofit or new design and is an ideal replacement system for typical office layouts.
- Occupancy and daylight sensors are integral to each luminaire. Luminaires in large rooms and open plan areas are grouped together up to a maximum of 50 using a handheld remote so room lighting turns on at first sign of occupancy.
- Upon first entry, grouped luminaires brighten up gently to a background level. Once occupants arrive at their workstations, luminaires in the immediate area brighten up to full illumination and will dim down when no presence is detected. Grouped luminaires will dim to off when no presence is detected in the group.
- Daylight sensing is automatic and re-calibration occurs daily when luminaires turn on.

## Energy Data

Standard DualLED				DualLED with SpaceWise Technology (SWZ option)								
				High Power Setting			Medium Power Setting <sup>4</sup>			Low Power Setting		
Model	Initial Delivered Lumens at 25°C Ambient <sup>5</sup>	Input Power	Lumens Per Watt <sup>5</sup>	Initial Delivered Lumens at 25°C Ambient <sup>5</sup>	Input Power Max Output	Input Power Background Output 277V / 120V	Approx. Initial Delivered Lumens at 25°C Ambient	Input Power Max Output	Input Power Background Output 277V / 120V	Approx. Initial Delivered Lumens at 25°C Ambient	Input Power Max Output 277V / 120V	Input Power Background Output 277V / 120V
2DLG43L840-4-D	4,304	46W	94LPW	4,304	46W	16W / 15W	3,788	39W	15W / 13W	3,314	35W / 34W	14W / 12W
2DLG43L835-4-D	4,045	46W	88LPW	4,045	46W	16W / 15W	3,560	39W	15W / 13W	3,115	35W / 34W	14W / 12W
2DLG49L840-4-D	4,919	55W	89LPW									
2DLG49L835-4-D	4,597	55W	84LPW									
2DLG58L840-4-D	5,756	61W	94LPW									
2DLG58L835-4-D	5,392	61W	88LPW									
2DLG73L840-4-D	7,263	80W	91LPW									
2DLG73L835-4-D	6,763	79W	86LPW									

Fluorescent Configuration	Approx. Total Delivered Lumens	DualLED Equivalent <sup>5</sup>
2 lamp F32T8	4,100	2DLG43L8xx-4-D
2 lamp F28T5	4,600	2DLG49L8xx-4-D
2 lamp F54T5SHO	7,200	2DLG73L8xx-4-D
3 lamp F32T8	6,000	2DLG58L8xx-4-D
3 lamp F28T5	6,300	2DLG58L8xx-4-D

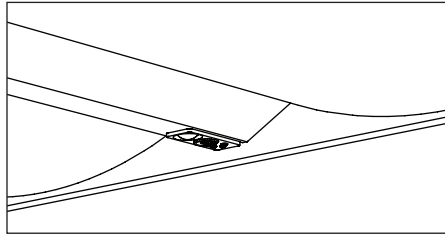
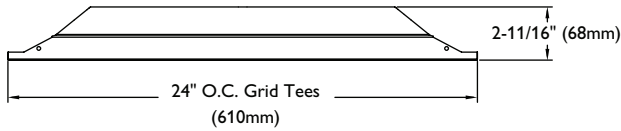
Fluorescent Configuration	Approx. Total Delivered Lumens	DualLED Equivalent <sup>5</sup>
4 lamp F32T8	7,200	2DLG73L8xx-4-D
4 lamp F28T5	8,000	n/a, max. lumens would be 2DLG73L8xx-4-D

<sup>5</sup>DualLED equivalent will provide similar delivered lumens and light levels. Analysis to determine appropriate light levels for the space is highly recommended.

<sup>4</sup>Medium power is the default setting. Users can change to high or low power using remote control when luminaires are grouped.

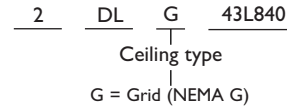
# DUALED RECESSED LED 2X4

## Dimensions

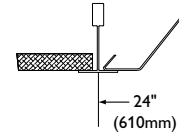


SpaceWise (SWZ) automated wireless technology is available for integrated occupancy and daylight harvesting. Individual options for dimming, occupancy detection, and daylight harvesting are also available if SpaceWise option is not selected.

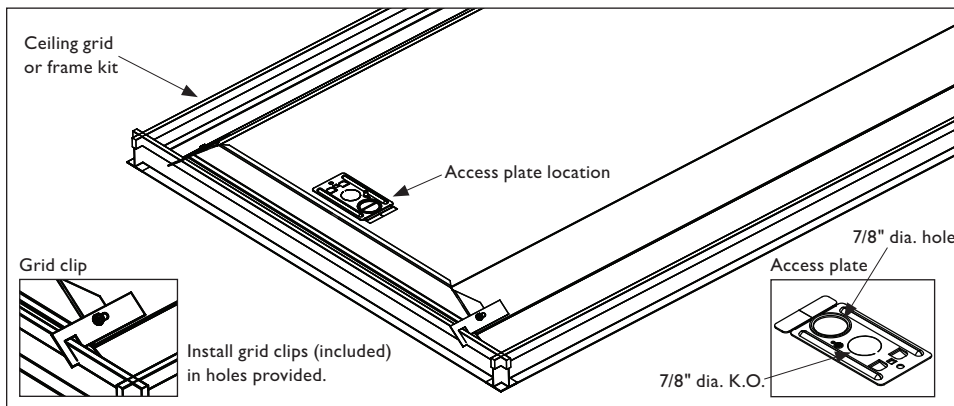
## Ceiling Configuration



SIDE



(NEMA Type G)  
Lay-in acoustical ceilings using exposed grid suspension, with tees for luminaires on 24" x 48" spacing.



## Photometry

### 2x4 DualLED, 4300 delivered lumens

### LER - 94

Catalog No.	2DLG43L840-4-D	Candlepower				Light Distribution			Average Luminance						
		Angle	End	45	Cross	Degrees	Lumens	% Luminaire	Angle	End	45°	Cross			
Test No.	30384	0	1454	1454	1454	0-30	1134	26.4	45	1889	1886	1907			
S/MH	1.3	5	1465	1449	1429	0-40	1863	43.3	55	1825	1844	1870			
Lamp Type	45WLED	10	1445	1429	1414	0-60	3330	77.4	65	1764	1770	1792			
Lumens/Lamp	4304	15	1414	1398	1386	0-90	4302	100.0	75	1606	1627	1591			
Input Watts	46	20	1369	1356	1356				85	1328	1312	1343			
		25	1314	1302	1307										
		30	1248	1236	1247										
		35	1173	1161	1176										
		40	1087	1076	1093										
		45	993	991	1002										
		50	888	895	912										
		55	778	786	797										
		60	664	672	684										
		65	554	556	563										
		70	430	440	432										
		75	309	313	306										
		80	194	190	193										
		85	86	85	87										
Comparative yearly lighting energy cost per 1000 lumens – \$2.55 based on 3000 hrs. and \$.08 pwr KWH.															
The photometric results were obtained in the Philips 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.															
						Coefficients of Utilization									
						EFFECTIVE FLOOR CAVITY REFLECTANCE 20 PER (pfc=0.20)									
						pcc	80			70			50		
						pw	70	50	30	70	50	30	50	30	
						RCR	0	118	118	118	115	115	115	111	111
						1	108	103	98	106	101	96	96	93	
						2	97	90	82	95	88	81	83	79	
						3	89	79	69	86	77	68	73	67	
						4	81	69	60	79	68	59	66	57	
						5	75	61	53	72	60	52	58	51	
						6	68	56	46	67	55	46	53	45	
						7	64	50	41	61	50	40	47	40	
						8	59	46	36	57	45	36	44	36	
						9	56	41	34	54	41	34	40	33	
						10	52	39	30	51	38	30	36	29	

# DUALED RECESSED LED 2X4

## Photometry

### 2x4 DuaLED, 4900 delivered lumens

### LER – 89

Catalog No.	2DLG49L840-4-D	Candlepower				Light Distribution			Average Luminance			
		Angle	End	45	Cross	Degrees	Lumens	% Luminaire	Angle	End	45°	Cross
Test No.	30385	0	1662	1662	1662	0-30	1296	26.4	45	2152	2150	2190
S/MH	1.3	5	1671	1656	1636	0-40	2129	43.3	55	2081	2118	2144
Lamp Type	53WLED	10	1650	1632	1622	0-60	3807	77.4	65	1961	2015	2053
Lumens/Lamp	4919	15	1615	1599	1591	0-90	4917	100.0	75	1814	1840	1814
Input Watts	55	20	1565	1549	1555				85	1528	1513	1528
		25	1499	1487	1497							
		30	1425	1414	1429							
		35	1337	1326	1346							
		40	1237	1231	1253							
		45	1131	1130	1151							
		50	1013	1033	1037							
Comparative yearly lighting energy cost per 1000 lumens – \$2.70 based on 3000 hrs. and \$.08 pwr KWH.		55	887	903	914							
		60	756	770	787							
		65	616	633	645							
		70	491	499	496							
		75	349	354	349							
		80	221	216	221							
		85	99	98	99							

The photometric results were obtained in the Philips 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.

Coefficients of Utilization												
EFFECTIVE FLOOR CAVITY REFLECTANCE 20 PER (pfc=0.20)												
pcc	80			70			50					
pw	70	50	30	70	50	30	70	50	30	70	50	30
RCR												
0	118	118	118	115	115	115	111	111	111	111	111	111
1	108	103	98	106	101	96	96	93	96	93	96	93
2	97	90	82	95	88	81	83	79	83	79	83	79
3	89	79	69	86	77	68	73	67	73	67	73	67
4	81	69	60	79	68	59	66	57	66	57	66	57
5	75	61	53	72	60	52	58	51	58	51	58	51
6	68	56	46	67	55	46	53	45	53	45	53	45
7	64	50	41	61	50	40	47	40	47	40	47	40
8	59	46	36	57	45	36	44	36	44	36	44	36
9	56	41	34	54	41	34	40	33	40	33	40	33
10	52	39	30	51	38	30	36	29	36	29	36	29

### 2x4 DuaLED, 5800 delivered lumens

### LER – 94

Catalog No.	2DLG58L840-4-D	Candlepower				Light Distribution			Average Luminance			
		Angle	End	45	Cross	Degrees	Lumens	% Luminaire	Angle	End	45°	Cross
Test No.	30372	0	1951	1951	1951	0-30	1522	26.4	45	2523	2519	2563
S/MH	1.3	5	1963	1943	1922	0-40	2499	43.4	55	2449	2444	2508
Lamp Type	30WLED	10	1937	1919	1905	0-60	4462	77.5	65	2305	2375	2413
Lumens/Lamp	5756	15	1895	1879	1865	0-90	5755	100.0	75	2126	2173	2111
Input Watts	61	20	1835	1821	1827				85	1714	1667	1698
		25	1761	1747	1759							
		30	1675	1658	1677							
		35	1572	1557	1580							
		40	1453	1444	1469							
		45	1326	1324	1347							
		50	1191	1191	1210							
Comparative yearly lighting energy cost per 1000 lumens – \$2.55 based on 3000 hrs. and \$.08 pwr KWH.		55	1044	1042	1069							
		60	882	886	919							
		65	724	746	758							
		70	573	589	580							
		75	409	418	406							
		80	258	253	252							
		85	111	108	110							

The photometric results were obtained in the Philips 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.

Coefficients of Utilization												
EFFECTIVE FLOOR CAVITY REFLECTANCE 20 PER (pfc=0.20)												
pcc	80			70			50					
pw	70	50	30	70	50	30	70	50	30	70	50	30
RCR												
0	118	118	118	115	115	115	111	111	111	111	111	111
1	108	103	98	106	101	96	96	93	96	93	96	93
2	97	90	82	95	88	81	83	79	83	79	83	79
3	89	79	69	86	77	68	73	67	73	67	73	67
4	81	69	60	79	68	59	66	57	66	57	66	57
5	75	61	53	72	60	52	58	51	58	51	58	51
6	68	56	46	67	55	46	53	45	53	45	53	45
7	64	51	41	63	50	40	47	40	47	40	47	40
8	59	46	36	57	45	36	44	36	44	36	44	36
9	56	41	34	54	41	34	40	33	40	33	40	33
10	52	39	30	51	38	30	36	29	36	29	36	29

### 2x4 DuaLED, 7300 delivered lumens

### LER – 91

Catalog No.	2DLG73L840-4-D	Candlepower				Light Distribution			Average Luminance			
		Angle	End	45	Cross	Degrees	Lumens	% Luminaire	Angle	End	45°	Cross
Test No.	30371	0	2460	2460	2460	0-30	1917	26.4	45	3172	3178	3229
S/MH	1.3	5	2464	2448	2428	0-40	3149	43.4	55	3078	3082	3172
Lamp Type	38WLED	10	2433	2417	2402	0-60	5630	77.5	65	2923	2996	3031
Lumens/Lamp	7263	15	2380	2364	2354	0-90	7264	100.0	75	2708	2719	2677
Input Watts	80	20	2306	2294	2306				85	2238	2115	2084
		25	2216	2200	2217							
		30	2101	2090	2117							
		35	1975	1963	1991							
		40	1825	1819	1852							
		45	1667	1670	1697							
		50	1505	1497	1532							
Comparative yearly lighting energy cost per 1000 lumens – \$2.64 based on 3000 hrs. and \$.08 pwr KWH.		55	1312	1314	1352							
		60	1122	1121	1161							
		65	918	941	952							
		70	730	744	733							
		75	521	523	515							
		80	322	317	313							
		85	145	137	135							

The photometric results were obtained in the Philips 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.

Coefficients of Utilization												
EFFECTIVE FLOOR CAVITY REFLECTANCE 20 PER (pfc=0.20)												
pcc	80			70			50					
pw	70	50	30	70	50	30	70	50	30	70	50	30
RCR												
0	118	118	118	115	115	115	111	111	111	111	111	111
1	108	103	98	106	101	96	96	93	96	93	96	93
2	97	90	82	95	88	81	83	79	83	79	83	79
3	89	79	69	86	77	68	73	67	73	67	73	67
4	81	69	60	79	68	59	66	57	66	57	66	57
5	75	61	53	72	60	52	58	51	58	51	58	51
6	68	56	46	67	55	46	53	45	53	45	53	45
7	64	51	41	61	50	40	47	40	47	40	47	40
8	59	46	36	57	45	36	44	36	44	36	44	36
9	56	41	34	54	41	34	40	33	40	33	40	33
10	52	39	30	51	38	30	36	29	36	29	36	29

# DUALED RECESSED LED 2X4

## Sample Applications

Spacing	Number of Luminaires	Model	Maintained Average Illumination	Max./Min.	Input Power per lum.	Watts/ Sq. foot
<b>Open Area</b>						
8'x8'	15	2DLG43L840-4-D	47.3 fc	2.6	46W	0.68
		2DLG49L840-4-D	54.1 fc	2.6	55W	0.82
		2DLG58L840-4-D	63.4 fc	2.7	61W	0.91
		2DLG73L840-4-D	79.9 fc	3.6	80W	1.19
8'x10'	15	2DLG43L840-4-D	38.2 fc	2.9	46W	0.55
		2DLG49L840-4-D	43.6 fc	2.9	55W	0.66
		2DLG58L840-4-D	51.1 fc	2.9	61W	0.73
		2DLG73L840-4-D	64.5 fc	2.9	80W	0.95
10'x10'	12	2DLG43L840-4-D	35.9 fc	2.3	46W	0.55
		2DLG49L840-4-D	41.0 fc	2.3	55W	0.66
		2DLG58L840-4-D	48.0 fc	2.3	61W	0.73
		2DLG73L840-4-D	60.6 fc	2.3	80W	0.95
10'x12'	12	2DLG43L840-4-D	34.9 fc	1.7	46W	0.55
		2DLG49L840-4-D	39.0 fc	1.7	55W	0.66
		2DLG58L840-4-D	45.6 fc	1.7	61W	0.73
		2DLG73L840-4-D	57.5 fc	1.7	80W	0.95

### Open Area:

The controlled high angle lighting distribution of DualLED provides diffuse uniform lighting in large spaces and creates significant vertical illumination. Wide luminaire spacing is possible.

### A sample area:

42' long x 24' wide x 9' ceiling  
80/50/20 reflectances  
Calculation grid at 2.5'  
Maintenance factors 0.85 LLD, 0.94 LDD, 0.799 LLF

Uniformity is excellent at 3.0 or less, even when moving to extended 10'x12' luminaire spacing. High delivered lumen options allow the extended spacing to provide IES recommended illumination levels for many tasks. Smooth, uniform lighting at recommended light levels with good vertical illumination is available with power density between 0.5 and 0.75 Watts per square foot, satisfying any known energy codes.

