

Date:	Approved:
Type:	
Fixture:	
Project:	

## LED Magnetic Retrofit Kits LS-MRK



### STANDARD



### FEATURES

- Available in 4000k (neutral white) & 5000k (cool white) color temperatures, and in sizes appropriate for retrofit of existing 2' x 2' or 2' x 4' fluorescent luminaires.\*
- Long-life LEDs provide at least 70% of initial lumen output ( $L_{70}$ ) for  $\geq 148,000$  hours of operation, and at least 90% of initial lumen output ( $L_{90}$ ) for  $\geq 46,000$  hours of operation.\*\*
- LED chromaticity based on  $\leq 5$ -step ANSI quadrangles.
- LED color maintenance  $\leq 0.002$  chromaticity shift ( $\Delta u'v'$ ) over the initial 6,000 of operation.
- Provides a range of 3,567 to 5,257 lumens.
- Universal 120-347 AC voltage (50-60Hz) is standard.
- 0-10vdc dimming drivers, which provide 10% continuous dimming are standard.
- Power factor  $> 0.90$ .
- Total harmonic distortion  $< 20\%$ .
- Color rendering index ( $R_a$ )  $\geq 80$ . Renders red colors ( $R_9$ )  $\geq 7$ .
- Choice of clear or frosted polycarbonate lenses.
- Easy retrofit installation in existing 2' x 2' and 2' x 4' fluorescent luminaires.
- LED strips and drivers include magnets for temporary attachment to luminaires, but both components must be secured with screw-down mounting flanges.

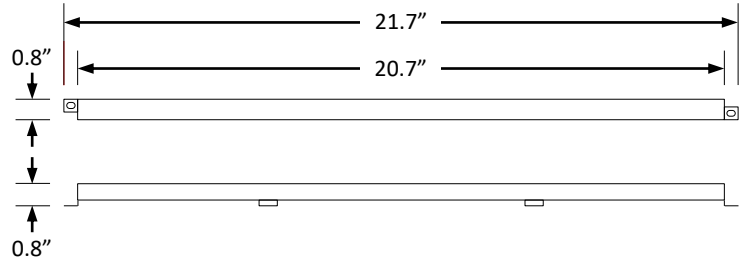
\* Contact factory for other color temperatures and lumen packages.  
\*\* L70 hours are IES TM-21-11 calculated hours.

### WARRANTY & LISTINGS

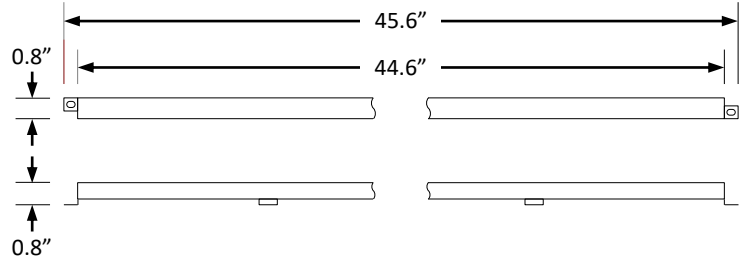
- cULus listed for damp locations in ambient temperatures from  $-20^{\circ}\text{C}$  to  $40^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$  to  $104^{\circ}\text{F}$ ).
- Models with clear lenses are DLC 5.0 premium approved.
- Models with frosted lenses are DLC 5.1 standard approved.
- Low risk of flicker per IEEE1789-2015 at 100% light output.
- Complies with FCC Part 15, class A.
- Complies with IEC61000-4-5, surge immunity protection (1kV).
- 5-year warranty of all electronics and housing.

### DIMENSIONS

#### 2-Foot Models



#### 4-Foot Models



### ORDERING INFORMATION

Example: LS-MRK-4FT-5L-5K-FL

Series	Length & Nominal Lumen Output		Color Temperature		Lens	
	Length	Nominal Lumen Output	Code	Temperature	Code	Description
LS-MRK	2FT-4L	2' = 4,000 lumens	4K	4000k	CL	Clear lens
	4FT-5L	4' = 5,000 lumens	5K	5000k	FL	Frosted lens

## ELECTRICAL DATA

Model	Color Temperature	CRI <sup>1</sup>	Luminaire Lumens	Luminaire Watts	Lumens/Watt	Input Voltage <sup>2</sup>	Input Current (A)			Power Factor	THD <sup>3</sup>	L <sub>70</sub> Hours <sup>4</sup>
							120V	277V	347V			
LS-MRK-2FT-4L-4K-CL	4000k	>80	3,973	32	125	120-347	0.27	0.12	0.09	>0.90	<20%	151,000
LS-MRK-2FT-4L-5K-CL	5000k	>80	3,993	32	126	120-347	0.27	0.12	0.09	>0.90	<20%	151,000
LS-MRK-2FT-4L-4K-FL	4000k	>80	3,567	32	110	120-347	0.27	0.12	0.09	>0.90	<20%	148,000
LS-MRK-2FT-4L-5K-FL	5000k	>80	3,577	32	113	120-347	0.27	0.12	0.09	>0.90	<20%	148,000
LS-MRK-4FT-5L-4K-CL	4000k	>80	5,012	39	128	120-347	0.33	0.14	0.11	>0.90	<20%	156,000
LS-MRK-4FT-5L-5K-CL	5000k	>80	5,257	39	134	120-347	0.33	0.14	0.11	>0.90	<20%	156,000
LS-MRK-4FT-5L-4K-FL	4000k	>80	4,683	39	119	120-347	0.33	0.14	0.11	>0.90	<20%	156,000
LS-MRK-4FT-5L-5K-FL	5000k	>80	4,726	39	120	120-347	0.33	0.14	0.11	>0.90	<20%	156,000

<sup>1</sup> Color rendering index.

<sup>2</sup> All 50-60Hz.

<sup>3</sup> Total harmonic distortion.

<sup>4</sup> L<sub>70</sub> refers to the number of hours at which lumen output declines to 70% of the initial level. L<sub>70</sub> hours are IES TM-21-11 calculated hours.

## PHOTOMETRIC DATA

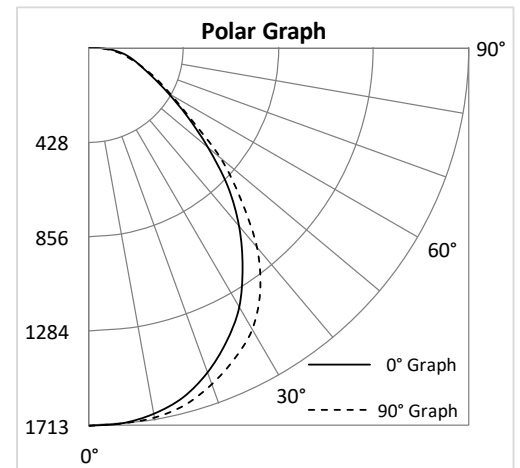
### LS-MRK-2FT-4L-4K-CL

#### Luminaire Data

Description	Magnetic Retrofit Kit - 2FT, 4L, 4K, Clear Lens
Total Lumens	3,973
Input Wattage	32
Efficacy (lm/W)	125
Spacing Criterion (0-180°)	1.2
Spacing Criterion (90-270°)	1.28

#### Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20°	632	15.9%
0-30°	1,335	33.6%
0-40°	2,140	53.9%
20-50°	2,237	56.3%
40-70°	1,548	39.0%
0-60°	3,379	85.1%
0-80°	3,878	97.6%
0-90°	3,961	99.7%
90-180°	12	0.3%
0-180°	3,973	100.0%



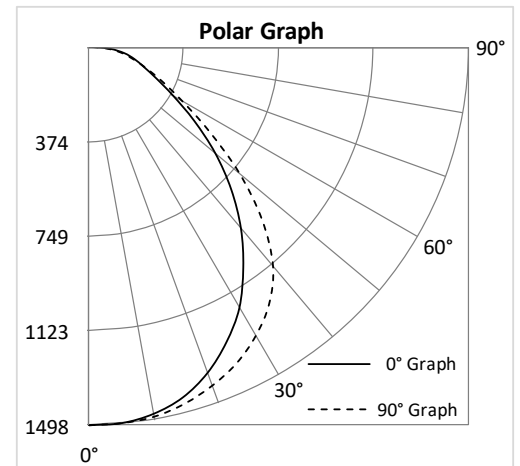
### LS-MRK-2FT-4L-4K-FL

#### Luminaire Data

Description	Magnetic Retrofit Kit - 2FT, 4L, 4K, Frosted Lens
Total Lumens	3,567
Input Wattage	32
Efficacy (lm/W)	110
Spacing Criterion (0-180°)	1.2
Spacing Criterion (90-270°)	1.32

#### Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20°	548	15.4%
0-30°	1,156	32.4%
0-40°	1,863	52.2%
20-50°	1,975	55.4%
40-70°	1,437	40.3%
0-60°	3,007	84.3%
0-80°	3,477	97.5%
0-90°	3,554	99.6%
90-180°	13	0.4%
0-180°	3,567	100.0%



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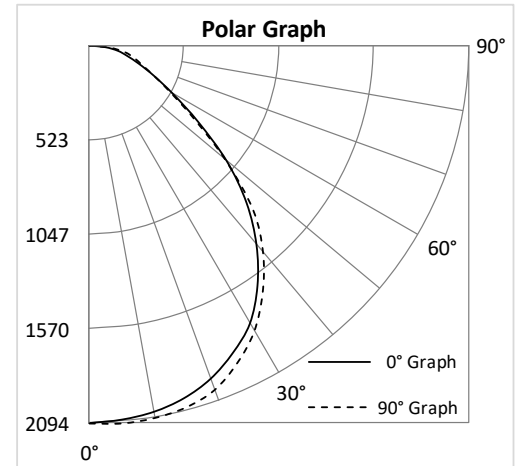
### LS-MRK-4FT-5L-4K-CL

#### Luminaire Data

Description	Magnetic Retrofit Kit - 4FT, 5L, 4K, Clear Lens
Total Lumens	5,012
Input Wattage	39
Efficacy (lm/W)	128
Spacing Criterion (0-180°)	1.26
Spacing Criterion (90-270°)	1.3

#### Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20°	777	15.5%
0-30°	1,656	33.0%
0-40°	2,678	53.4%
20-50°	2,843	56.7%
40-70°	1,976	39.4%
0-60°	4,268	85.2%
0-80°	4,894	97.6%
0-90°	5,001	99.8%
90-180°	11	0.2%
0-180°	5,012	100.0%



### LS-MRK-4FT-5L-4K-FL

#### Luminaire Data

Description	Magnetic Retrofit Kit - 4FT, 5L, 4K, Frosted Lens
Total Lumens	4,683
Input Wattage	39
Efficacy (lm/W)	119
Spacing Criterion (0-180°)	1.2
Spacing Criterion (90-270°)	1.26

#### Zonal Lumen Summary

Zone	Lumens	%Fixt
0-20°	723	15.4%
0-30°	1,527	32.6%
0-40°	2,455	52.4%
20-50°	2,605	55.6%
40-70°	1,884	40.2%
0-60°	3,962	84.6%
0-80°	4,569	97.6%
0-90°	4,672	99.8%
90-180°	11	0.2%
0-180°	4,683	100.0%

