

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P563592

Luminaire Tested: FSR-24-4-LD4-3STD-50-UNV-81-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563592  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-3STD-50-UNV-81-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

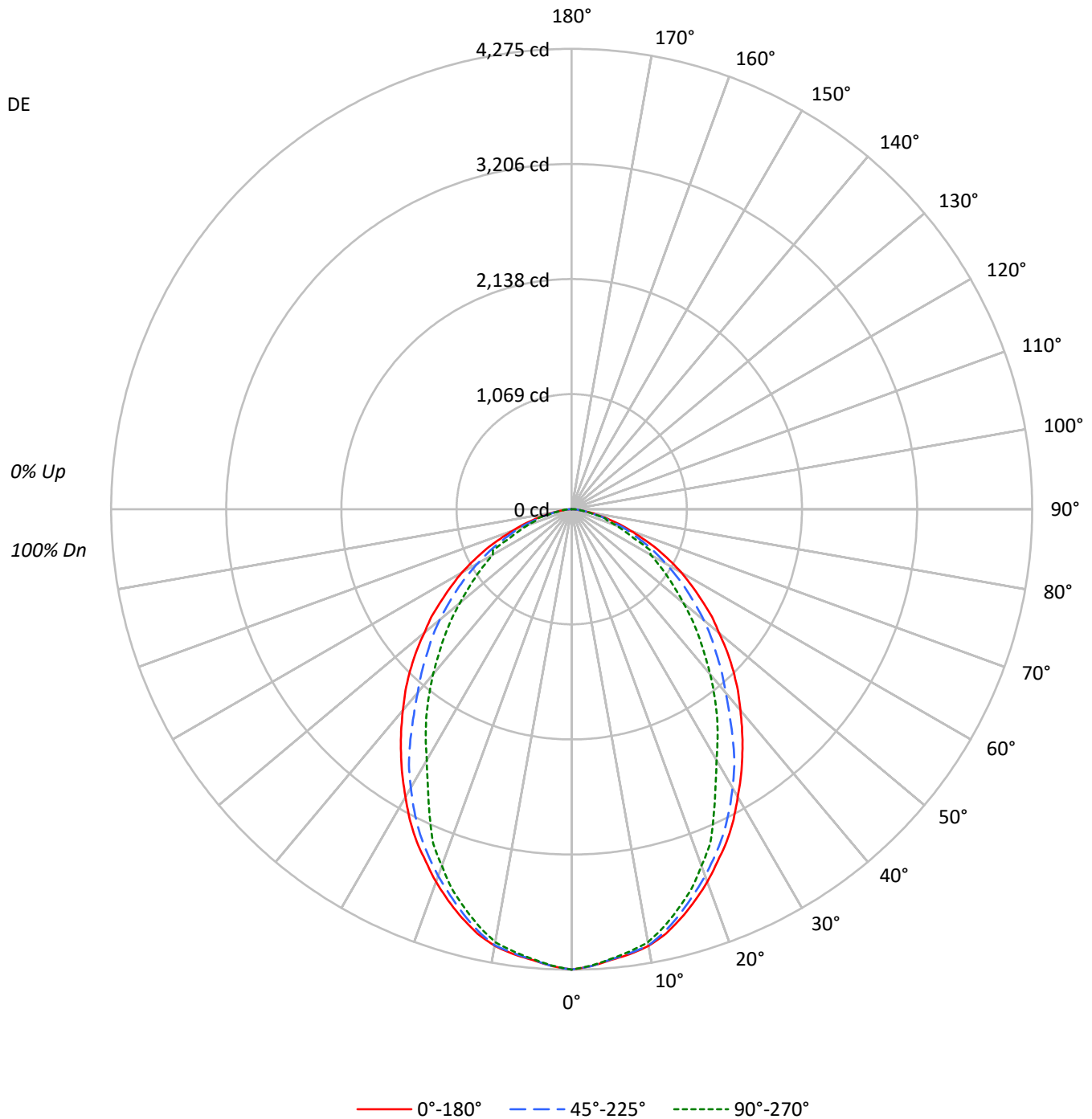
Lumens per Lamp: N/A  
Luminaire Lumens: 8392.0 lumens  
Efficiency: N/A  
Efficacy: 84.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89					87				
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77					75				
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67					65				
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58					56				
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52					50				
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46					44				
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42					40				
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38					36				
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34					33				
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32					30				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5752	5752	5752
5°	5673	5667	5660
10°	5624	5618	5577
15°	5473	5418	5342
20°	5272	5187	5045
25°	5055	4945	4637
30°	4791	4637	4177
35°	4538	4286	3864
40°	4279	3906	3515
45°	4034	3611	3178
50°	3734	3352	2834
55°	3455	3037	2539
60°	3165	2713	2274
65°	2785	2376	2014
70°	2294	2080	1711
75°	1824	1593	1670
80°	1225	1149	1072
85°	763	915	1068

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4034 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	397.9	4.7
10°-20°	1092.1	13.0
20°-30°	1511.9	18.0
30°-40°	1612.1	19.2
40°-50°	1470.7	17.5
50°-60°	1152.2	13.7
60°-70°	751.0	8.9
70°-80°	332.7	4.0
80°-90°	71.4	0.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	3001.9	35.8
0°-40°	4614.0	55.0
0°-60°	7236.9	86.2
0°-90°	8392.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8392.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4275	4275	4275	4275	4275	
5°	4201	4196	4196	4191	4191	399
15°	3929	3929	3889	3850	3835	1104
25°	3405	3385	3331	3212	3123	1563
35°	2762	2743	2609	2412	2352	1727
45°	2120	2076	1898	1740	1670	1633
55°	1473	1428	1295	1142	1082	1321
65°	875	825	746	761	633	862
75°	351	326	306	292	321	376
85°	49	54	59	64	69	69
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4274.8	4274.8	4274.8	4274.8	4274.8
2.5°	4245.1	4245.1	4245.1	4240.2	4240.2
5°	4200.6	4195.7	4195.7	4190.8	4190.8
7.5°	4166.1	4161.1	4156.2	4151.2	4141.3
10°	4116.6	4116.6	4111.7	4087.0	4082.0
12.5°	4037.6	4032.6	4012.9	3978.3	3968.4
15°	3928.8	3928.8	3889.3	3849.8	3834.9
17.5°	3810.2	3805.3	3755.9	3716.3	3696.6
20°	3681.7	3671.9	3622.4	3558.2	3523.6
22.5°	3538.4	3538.4	3479.1	3395.1	3360.5
25°	3405.0	3385.2	3330.9	3212.3	3123.3
27.5°	3251.8	3222.1	3162.8	2994.8	2891.0
30°	3083.8	3068.9	2984.9	2767.5	2688.4
32.5°	2925.6	2900.9	2812.0	2584.6	2520.4
35°	2762.5	2742.8	2609.3	2411.7	2352.4
37.5°	2599.5	2574.7	2406.7	2248.6	2174.5
40°	2436.4	2406.7	2223.9	2080.6	2001.5
42.5°	2283.2	2243.6	2065.7	1912.5	1823.6
45°	2120.1	2075.6	1897.7	1739.6	1670.4
47.5°	1957.0	1917.5	1754.4	1591.3	1512.2
50°	1784.0	1749.4	1601.2	1438.1	1354.1
52.5°	1640.7	1586.4	1443.0	1280.0	1210.8
55°	1472.7	1428.2	1294.8	1141.6	1082.3
57.5°	1319.5	1275.0	1151.5	1008.2	958.7
60°	1176.2	1111.9	1008.2	884.6	845.1
62.5°	1018.0	968.6	879.7	775.9	825.3
65°	874.7	825.3	746.2	761.1	632.6
67.5°	716.6	691.9	622.7	553.5	533.7
70°	583.1	553.5	528.8	454.7	434.9
72.5°	464.5	434.9	400.3	360.8	345.9
75°	350.9	326.2	306.4	291.6	321.2
77.5°	242.2	232.3	217.4	202.6	197.7
80°	158.1	153.2	148.3	143.3	138.4
82.5°	93.9	93.9	93.9	93.9	93.9
85°	49.4	54.4	59.3	64.2	69.2
87.5°	29.7	29.7	34.6	39.5	44.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)