

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: P563817

Luminaire Tested: FSR-24-4-LD4-4HI-50-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563817  
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-LD4-4HI-50-UNV-93-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

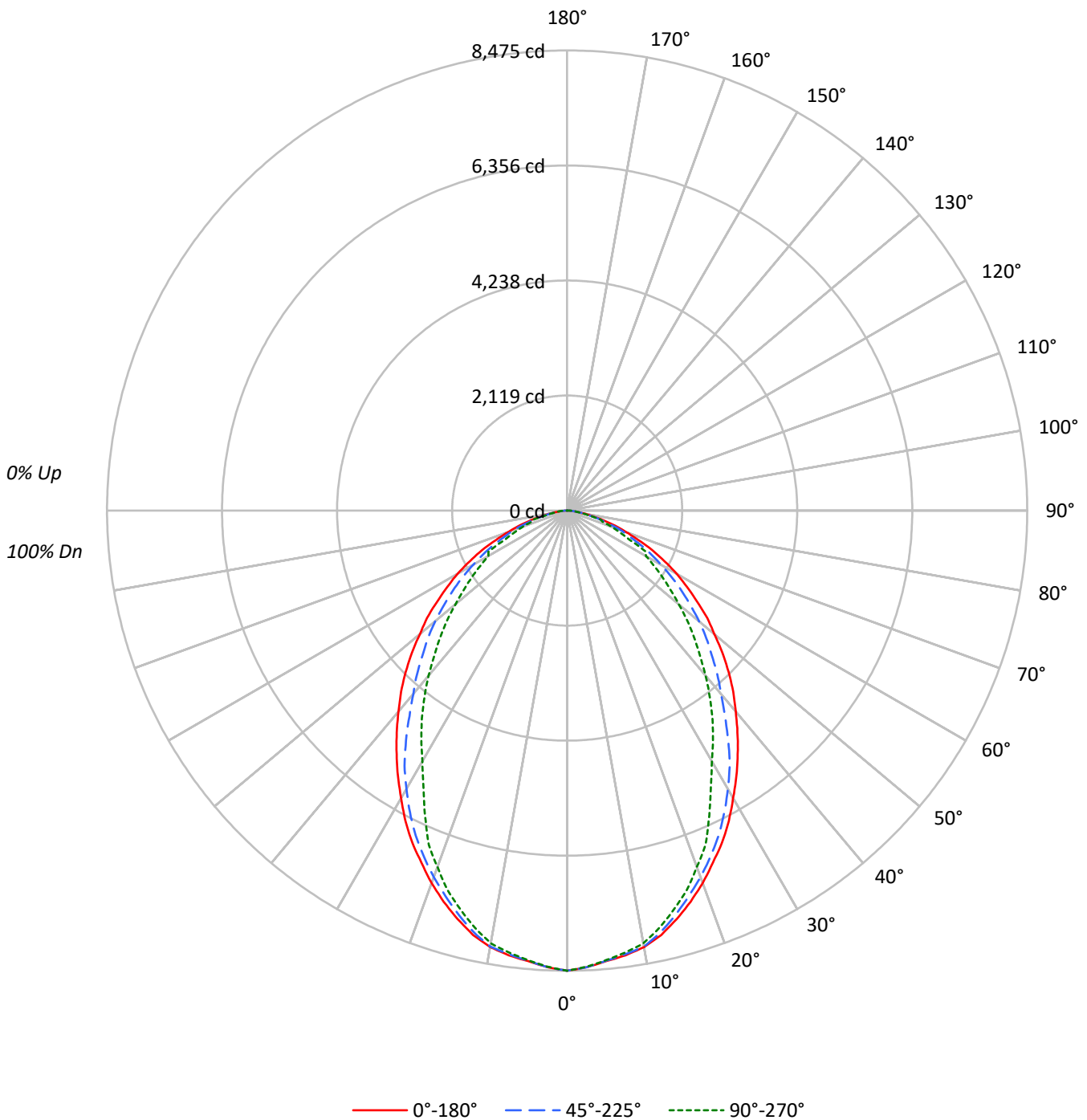
Lumens per Lamp: N/A  
Luminaire Lumens: 16638.0 lumens  
Efficiency: N/A  
Efficacy: 96.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	11403	11403	11403
5°	11248	11235	11222
10°	11151	11137	11057
15°	10850	10741	10591
20°	10452	10283	10003
25°	10022	9804	9193
30°	9499	9194	8281
35°	8996	8497	7660
40°	8484	7744	6970
45°	7998	7159	6302
50°	7404	6645	5619
55°	6849	6022	5033
60°	6275	5379	4508
65°	5521	4710	3993
70°	4548	4124	3392
75°	3617	3158	3311
80°	2429	2277	2125
85°	1513	1815	2118

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7998 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	788.9	4.7
10°-20°	2165.1	13.0
20°-30°	2997.5	18.0
30°-40°	3196.2	19.2
40°-50°	2915.9	17.5
50°-60°	2284.3	13.7
60°-70°	1488.8	8.9
70°-80°	659.6	4.0
80°-90°	141.6	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°	5951.5	35.8
0°-40°	9147.7	55.0
0°-60°	14348.0	86.2
0°-90°	16638.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16638.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8475	8475	8475	8475	8475	
5°	8328	8318	8318	8309	8309	791
15°	7789	7789	7711	7633	7603	2190
25°	6751	6712	6604	6369	6192	3099
35°	5477	5438	5173	4781	4664	3424
45°	4203	4115	3762	3449	3312	3238
55°	2920	2832	2567	2263	2146	2619
65°	1734	1636	1480	1509	1254	1709
75°	696	647	608	578	637	746
85°	98	108	118	127	137	136
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8475.2	8475.2	8475.2	8475.2	8475.2
2.5°	8416.4	8416.4	8416.4	8406.6	8406.6
5°	8328.2	8318.4	8318.4	8308.6	8308.6
7.5°	8259.6	8249.8	8240.0	8230.2	8210.6
10°	8161.6	8161.6	8151.8	8102.9	8093.1
12.5°	8004.9	7995.1	7955.9	7887.3	7867.7
15°	7789.3	7789.3	7710.9	7632.6	7603.2
17.5°	7554.2	7544.4	7446.4	7368.0	7328.8
20°	7299.4	7279.8	7181.9	7054.5	6985.9
22.5°	7015.3	7015.3	6897.7	6731.2	6662.6
25°	6750.7	6711.6	6603.8	6368.6	6192.3
27.5°	6447.0	6388.2	6270.6	5937.5	5731.8
30°	6113.9	6084.5	5917.9	5486.8	5330.1
32.5°	5800.4	5751.4	5575.0	5124.3	4996.9
35°	5477.0	5437.8	5173.3	4781.4	4663.8
37.5°	5153.7	5104.7	4771.6	4458.0	4311.1
40°	4830.4	4771.6	4409.1	4124.9	3968.1
42.5°	4526.6	4448.2	4095.5	3791.8	3615.4
45°	4203.3	4115.1	3762.4	3448.9	3311.7
47.5°	3880.0	3801.6	3478.3	3154.9	2998.2
50°	3537.0	3468.5	3174.5	2851.2	2684.6
52.5°	3252.9	3145.1	2861.0	2537.7	2400.5
55°	2919.8	2831.6	2567.0	2263.3	2145.7
57.5°	2616.0	2527.9	2282.9	1998.8	1900.8
60°	2331.9	2204.5	1998.8	1753.8	1675.4
62.5°	2018.4	1920.4	1744.0	1538.3	1636.2
65°	1734.2	1636.2	1479.5	1508.9	1254.1
67.5°	1420.7	1371.7	1234.5	1097.4	1058.2
70°	1156.2	1097.4	1048.4	901.4	862.2
72.5°	921.0	862.2	793.6	715.2	685.9
75°	695.7	646.7	607.5	578.1	636.9
77.5°	480.1	460.5	431.1	401.7	391.9
80°	313.5	303.7	293.9	284.1	274.3
82.5°	186.2	186.2	186.2	186.2	186.2
85°	98.0	107.8	117.6	127.4	137.2
87.5°	58.8	58.8	68.6	78.4	88.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)