

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: P563950

Luminaire Tested: FSR-24-4-LD4-4LO-40-UNV-93-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563950  
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-LD4-4LO-40-UNV-93-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

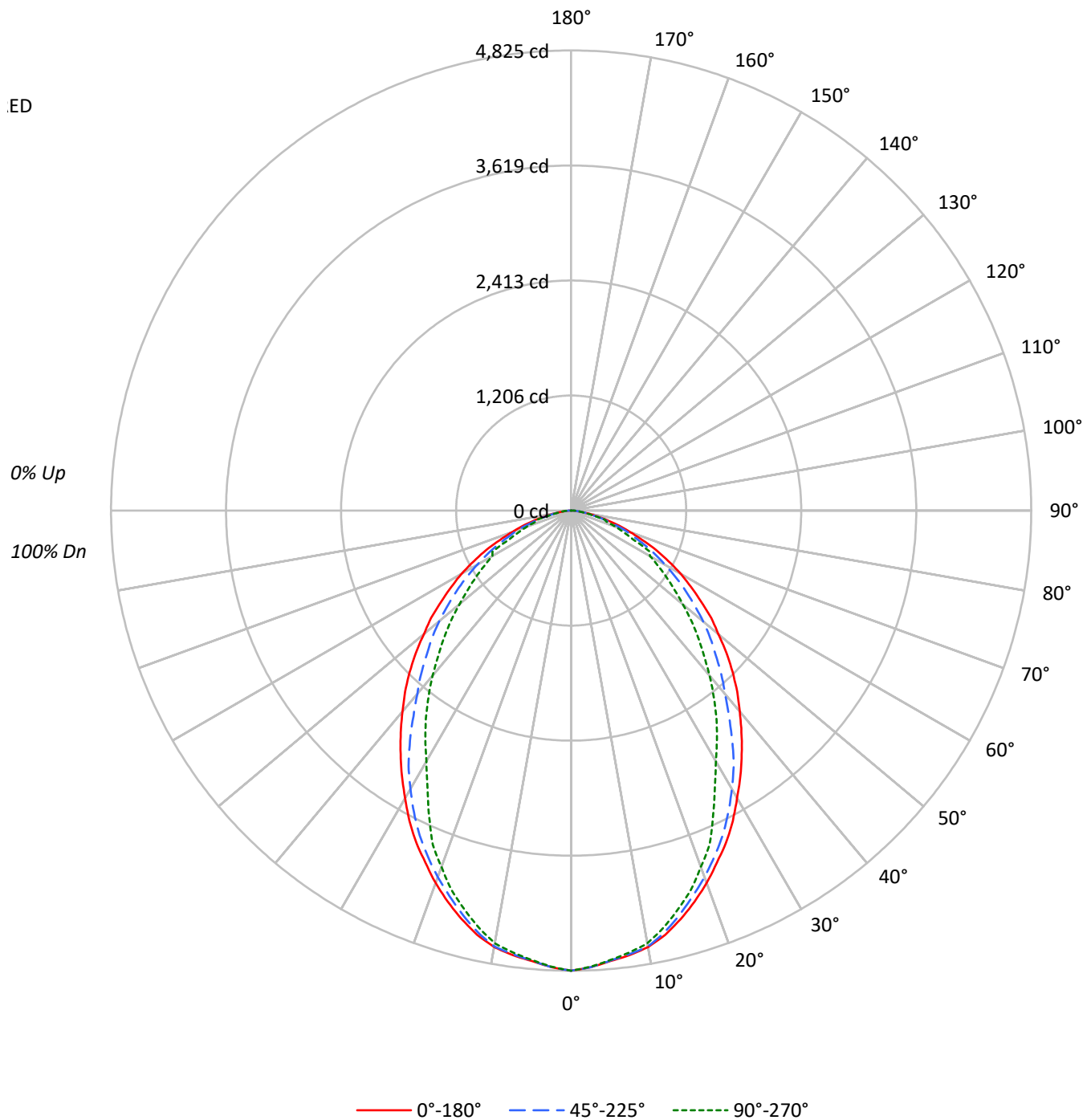
Lumens per Lamp: N/A  
Luminaire Lumens: 9472.0 lumens  
Efficiency: N/A  
Efficacy: 101.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6492	6492	6492
5°	6404	6396	6389
10°	6348	6340	6295
15°	6177	6115	6029
20°	5950	5854	5695
25°	5706	5581	5234
30°	5408	5234	4714
35°	5122	4837	4361
40°	4830	4409	3968
45°	4553	4076	3587
50°	4215	3783	3199
55°	3899	3428	2866
60°	3572	3062	2567
65°	3143	2682	2273
70°	2589	2348	1931
75°	2059	1798	1885
80°	1383	1296	1210
85°	861	1033	1206

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4553 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	449.1	4.7
10°-20°	1232.6	13.0
20°-30°	1706.5	18.0
30°-40°	1819.6	19.2
40°-50°	1660.0	17.5
50°-60°	1300.5	13.7
60°-70°	847.6	8.9
70°-80°	375.5	4.0
80°-90°	80.6	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°	3388.2	35.8
0°-40°	5207.8	55.0
0°-60°	8168.3	86.2
0°-90°	9472.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9472.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4825	4825	4825	4825	4825	
5°	4741	4736	4736	4730	4730	450
15°	4434	4434	4390	4345	4328	1247
25°	3843	3821	3760	3626	3525	1764
35°	3118	3096	2945	2722	2655	1949
45°	2393	2343	2142	1963	1885	1843
55°	1662	1612	1461	1288	1222	1491
65°	987	932	842	859	714	973
75°	396	368	346	329	363	424
85°	56	61	67	72	78	77
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4824.9	4824.9	4824.9	4824.9	4824.9
2.5°	4791.4	4791.4	4791.4	4785.9	4785.9
5°	4741.2	4735.7	4735.7	4730.1	4730.1
7.5°	4702.2	4696.6	4691.0	4685.5	4674.3
10°	4646.4	4646.4	4640.8	4612.9	4607.4
12.5°	4557.2	4551.6	4529.3	4490.2	4479.1
15°	4434.5	4434.5	4389.8	4345.2	4328.5
17.5°	4300.6	4295.0	4239.2	4194.6	4172.3
20°	4155.6	4144.4	4088.6	4016.1	3977.1
22.5°	3993.8	3993.8	3926.9	3832.0	3793.0
25°	3843.2	3820.9	3759.5	3625.7	3525.3
27.5°	3670.3	3636.8	3569.9	3380.2	3263.1
30°	3480.6	3463.9	3369.1	3123.6	3034.4
32.5°	3302.1	3274.2	3173.8	2917.3	2844.7
35°	3118.1	3095.8	2945.1	2722.0	2655.1
37.5°	2934.0	2906.1	2716.5	2538.0	2454.3
40°	2749.9	2716.5	2510.1	2348.3	2259.1
42.5°	2577.0	2532.4	2331.6	2158.7	2058.3
45°	2392.9	2342.7	2141.9	1963.4	1885.3
47.5°	2208.9	2164.2	1980.2	1796.1	1706.8
50°	2013.6	1974.6	1807.2	1623.2	1528.4
52.5°	1851.9	1790.5	1628.8	1444.7	1366.6
55°	1662.2	1612.0	1461.4	1288.5	1221.6
57.5°	1489.3	1439.1	1299.7	1137.9	1082.1
60°	1327.5	1255.0	1137.9	998.4	953.8
62.5°	1149.1	1093.3	992.9	875.7	931.5
65°	987.3	931.5	842.3	859.0	714.0
67.5°	808.8	780.9	702.8	624.7	602.4
70°	658.2	624.7	596.8	513.2	490.9
72.5°	524.3	490.9	451.8	407.2	390.5
75°	396.0	368.1	345.8	329.1	362.6
77.5°	273.3	262.2	245.4	228.7	223.1
80°	178.5	172.9	167.3	161.8	156.2
82.5°	106.0	106.0	106.0	106.0	106.0
85°	55.8	61.4	66.9	72.5	78.1
87.5°	33.5	33.5	39.0	44.6	50.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)