

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: P562278

Luminaire Tested: FSR-24-4-LD4-1LO-50-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562278  
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-LD4-1LO-50-UNV-93-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

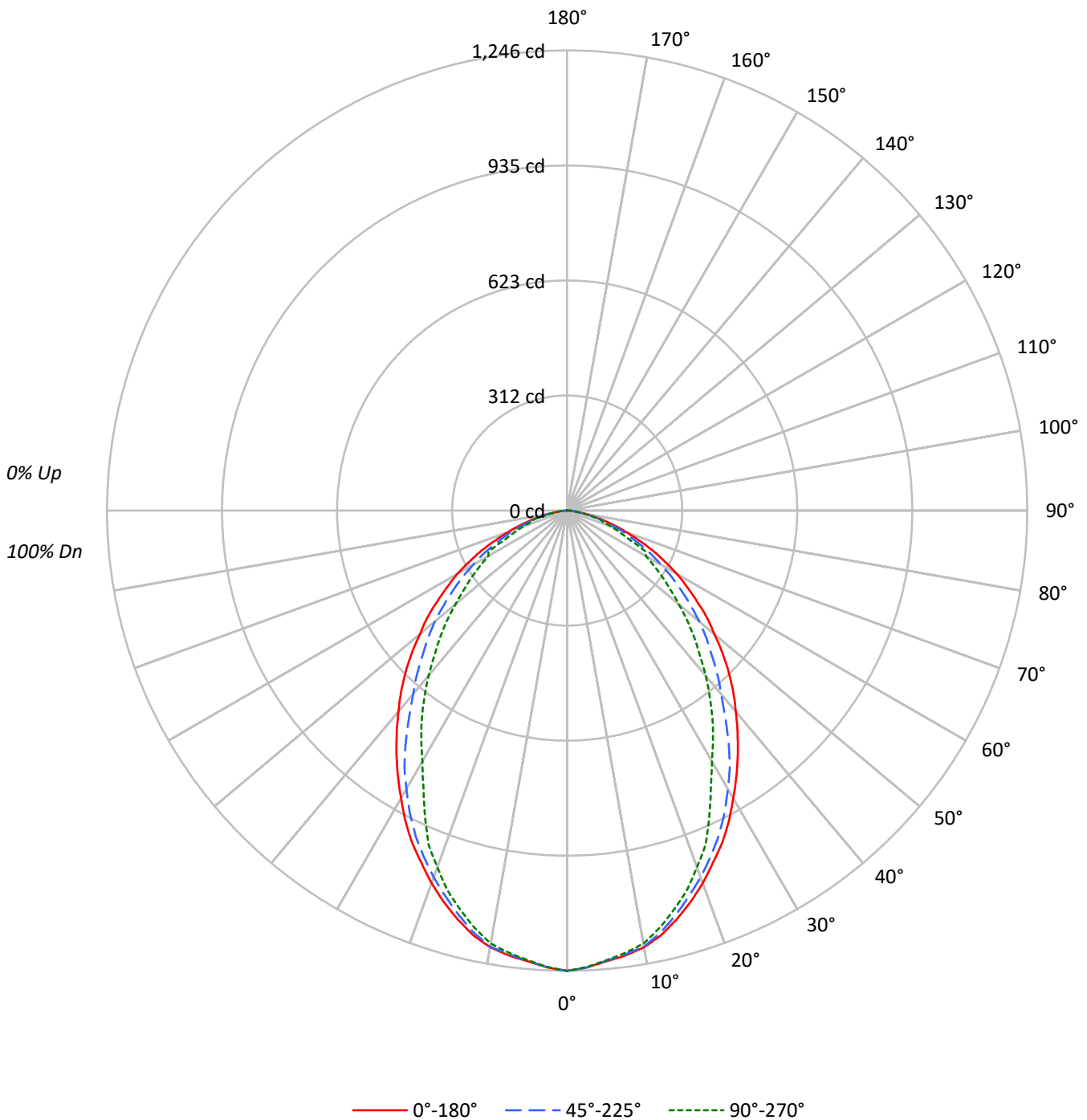
Lumens per Lamp: N/A  
Luminaire Lumens: 2447.0 lumens  
Efficiency: N/A  
Efficacy: 104.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	1677	1677	1677
5°	1654	1652	1650
10°	1640	1638	1626
15°	1596	1580	1558
20°	1537	1512	1471
25°	1474	1442	1352
30°	1397	1352	1218
35°	1323	1250	1127
40°	1248	1139	1025
45°	1176	1053	927
50°	1089	977	826
55°	1007	886	740
60°	923	791	663
65°	812	693	587
70°	669	607	499
75°	532	464	487
80°	357	335	312
85°	222	267	312

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1176 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.0	4.7
10°-20°	318.4	13.0
20°-30°	440.9	18.0
30°-40°	470.1	19.2
40°-50°	428.8	17.5
50°-60°	336.0	13.7
60°-70°	219.0	8.9
70°-80°	97.0	4.0
80°-90°	20.8	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°	875.3	35.8
0°-40°	1345.4	55.0
0°-60°	2110.2	86.2
0°-90°	2447.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2447.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1246	1246	1246	1246	1246	
5°	1225	1223	1223	1222	1222	116
15°	1146	1146	1134	1122	1118	322
25°	993	987	971	937	911	456
35°	806	800	761	703	686	504
45°	618	605	553	507	487	476
55°	429	416	378	333	316	385
65°	255	241	218	222	184	251
75°	102	95	89	85	94	110
85°	14	16	17	19	20	20
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1246.5	1246.5	1246.5	1246.5	1246.5
2.5°	1237.8	1237.8	1237.8	1236.4	1236.4
5°	1224.9	1223.4	1223.4	1222.0	1222.0
7.5°	1214.8	1213.3	1211.9	1210.4	1207.6
10°	1200.4	1200.4	1198.9	1191.7	1190.3
12.5°	1177.3	1175.9	1170.1	1160.0	1157.1
15°	1145.6	1145.6	1134.1	1122.5	1118.2
17.5°	1111.0	1109.6	1095.2	1083.6	1077.9
20°	1073.5	1070.7	1056.3	1037.5	1027.4
22.5°	1031.8	1031.8	1014.5	990.0	979.9
25°	992.9	987.1	971.2	936.7	910.7
27.5°	948.2	939.5	922.2	873.2	843.0
30°	899.2	894.9	870.4	807.0	783.9
32.5°	853.1	845.9	819.9	753.6	734.9
35°	805.5	799.8	760.9	703.2	685.9
37.5°	758.0	750.8	701.8	655.7	634.0
40°	710.4	701.8	648.5	606.7	583.6
42.5°	665.7	654.2	602.3	557.7	531.7
45°	618.2	605.2	553.3	507.2	487.1
47.5°	570.6	559.1	511.6	464.0	440.9
50°	520.2	510.1	466.9	419.3	394.8
52.5°	478.4	462.6	420.8	373.2	353.0
55°	429.4	416.5	377.5	332.9	315.6
57.5°	384.7	371.8	335.8	294.0	279.6
60°	343.0	324.2	294.0	257.9	246.4
62.5°	296.8	282.4	256.5	226.2	240.6
65°	255.1	240.6	217.6	221.9	184.4
67.5°	208.9	201.7	181.6	161.4	155.6
70°	170.0	161.4	154.2	132.6	126.8
72.5°	135.5	126.8	116.7	105.2	100.9
75°	102.3	95.1	89.3	85.0	93.7
77.5°	70.6	67.7	63.4	59.1	57.6
80°	46.1	44.7	43.2	41.8	40.3
82.5°	27.4	27.4	27.4	27.4	27.4
85°	14.4	15.9	17.3	18.7	20.2
87.5°	8.6	8.6	10.1	11.5	13.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)