

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: P562378

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-81-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562378  
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-LD4-1STD-40-UNV-81-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

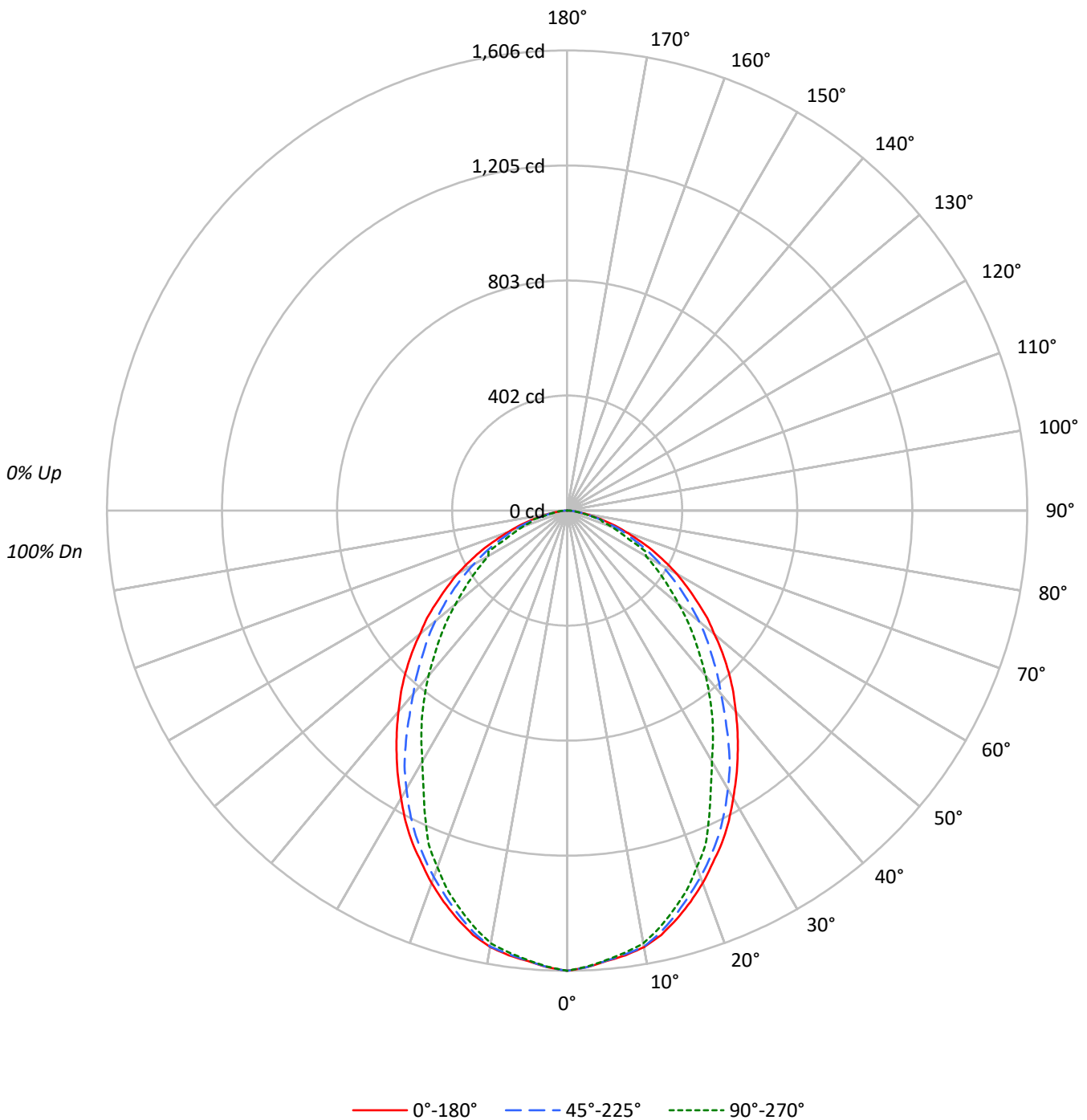
Lumens per Lamp: N/A  
Luminaire Lumens: 3153.0 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	2161	2161	2161
5°	2132	2129	2127
10°	2113	2111	2095
15°	2056	2036	2007
20°	1981	1949	1896
25°	1899	1858	1742
30°	1800	1742	1569
35°	1705	1610	1452
40°	1608	1467	1321
45°	1516	1357	1194
50°	1403	1259	1065
55°	1298	1141	954
60°	1189	1019	854
65°	1046	893	757
70°	862	782	643
75°	685	598	627
80°	460	432	403
85°	287	344	401

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1516 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.5	4.7
10°-20°	410.3	13.0
20°-30°	568.0	18.0
30°-40°	605.7	19.2
40°-50°	552.6	17.5
50°-60°	432.9	13.7
60°-70°	282.1	8.9
70°-80°	125.0	4.0
80°-90°	26.8	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°	1127.9	35.8
0°-40°	1733.6	55.0
0°-60°	2719.0	86.2
0°-90°	3153.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3153.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1606	1606	1606	1606	1606	
5°	1578	1576	1576	1574	1574	150
15°	1476	1476	1461	1446	1441	415
25°	1279	1272	1252	1207	1174	587
35°	1038	1030	980	906	884	649
45°	796	780	713	654	628	614
55°	553	537	486	429	407	496
65°	329	310	280	286	238	324
75°	132	122	115	110	121	141
85°	19	20	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1606.1	1606.1	1606.1	1606.1	1606.1
2.5°	1595.0	1595.0	1595.0	1593.1	1593.1
5°	1578.2	1576.4	1576.4	1574.5	1574.5
7.5°	1565.2	1563.4	1561.5	1559.7	1556.0
10°	1546.7	1546.7	1544.8	1535.5	1533.7
12.5°	1517.0	1515.1	1507.7	1494.7	1491.0
15°	1476.1	1476.1	1461.3	1446.4	1440.8
17.5°	1431.6	1429.7	1411.1	1396.3	1388.9
20°	1383.3	1379.6	1361.0	1336.9	1323.9
22.5°	1329.4	1329.4	1307.2	1275.6	1262.6
25°	1279.3	1271.9	1251.5	1206.9	1173.5
27.5°	1221.7	1210.6	1188.3	1125.2	1086.2
30°	1158.6	1153.0	1121.5	1039.8	1010.1
32.5°	1099.2	1089.9	1056.5	971.1	946.9
35°	1037.9	1030.5	980.4	906.1	883.8
37.5°	976.7	967.4	904.2	844.8	817.0
40°	915.4	904.2	835.5	781.7	752.0
42.5°	857.8	843.0	776.1	718.6	685.1
45°	796.5	779.8	713.0	653.6	627.6
47.5°	735.3	720.4	659.1	597.9	568.2
50°	670.3	657.3	601.6	540.3	508.8
52.5°	616.4	596.0	542.2	480.9	454.9
55°	553.3	536.6	486.5	428.9	406.6
57.5°	495.8	479.0	432.6	378.8	360.2
60°	441.9	417.8	378.8	332.4	317.5
62.5°	382.5	363.9	330.5	291.5	310.1
65°	328.6	310.1	280.4	285.9	237.7
67.5°	269.2	259.9	234.0	208.0	200.5
70°	219.1	208.0	198.7	170.8	163.4
72.5°	174.5	163.4	150.4	135.5	130.0
75°	131.8	122.5	115.1	109.5	120.7
77.5°	91.0	87.3	81.7	76.1	74.3
80°	59.4	57.6	55.7	53.8	52.0
82.5°	35.3	35.3	35.3	35.3	35.3
85°	18.6	20.4	22.3	24.1	26.0
87.5°	11.1	11.1	13.0	14.9	16.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)