

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: P562332

Luminaire Tested: FSR-24-4-LD4-1STD-35-UNV-82-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562332  
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-35-UNV-82-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

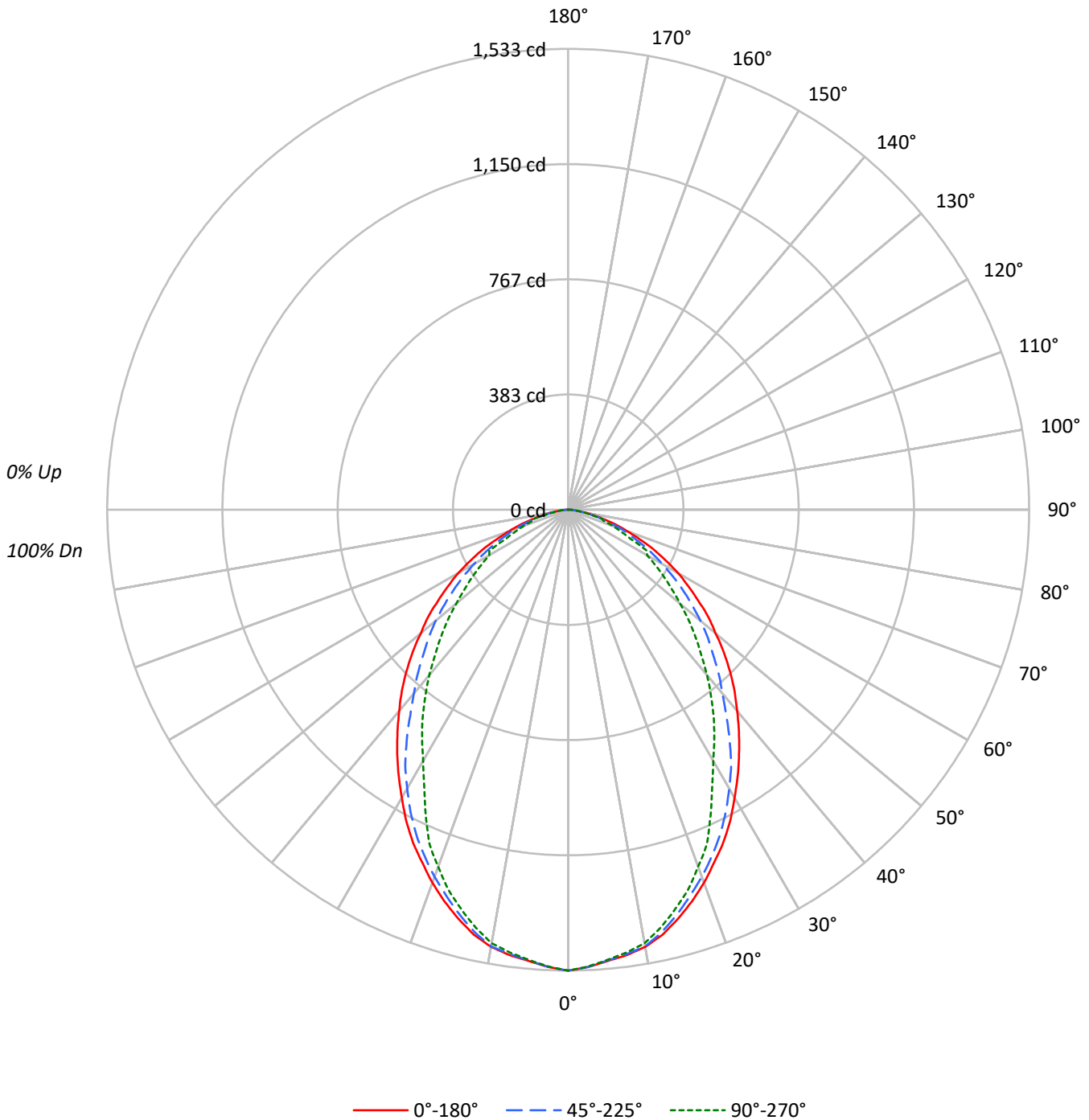
Lumens per Lamp: N/A  
Luminaire Lumens: 3010.0 lumens  
Efficiency: N/A  
Efficacy: 90.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2063	2063	2063
5°	2035	2033	2030
10°	2017	2015	2000
15°	1963	1943	1916
20°	1891	1860	1810
25°	1813	1774	1663
30°	1718	1663	1498
35°	1628	1537	1386
40°	1535	1401	1261
45°	1447	1295	1140
50°	1339	1202	1017
55°	1239	1089	911
60°	1135	973	816
65°	999	852	722
70°	823	746	614
75°	655	571	599
80°	439	412	384
85°	273	329	383

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1447 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	142.7	4.7
10°-20°	391.7	13.0
20°-30°	542.3	18.0
30°-40°	578.2	19.2
40°-50°	527.5	17.5
50°-60°	413.3	13.7
60°-70°	269.3	8.9
70°-80°	119.3	4.0
80°-90°	25.6	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°	1076.7	35.8
0°-40°	1654.9	55.0
0°-60°	2595.7	86.2
0°-90°	3010.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3010.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1533	1533	1533	1533	1533	
5°	1507	1505	1505	1503	1503	143
15°	1409	1409	1395	1381	1376	396
25°	1221	1214	1195	1152	1120	561
35°	991	984	936	865	844	619
45°	760	744	681	624	599	586
55°	528	512	464	410	388	474
65°	314	296	268	273	227	309
75°	126	117	110	105	115	135
85°	18	20	21	23	25	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1533.3	1533.3	1533.3	1533.3	1533.3
2.5°	1522.6	1522.6	1522.6	1520.8	1520.8
5°	1506.7	1504.9	1504.9	1503.1	1503.1
7.5°	1494.3	1492.5	1490.7	1488.9	1485.4
10°	1476.5	1476.5	1474.8	1465.9	1464.1
12.5°	1448.2	1446.4	1439.3	1426.9	1423.4
15°	1409.2	1409.2	1395.0	1380.8	1375.5
17.5°	1366.6	1364.9	1347.1	1333.0	1325.9
20°	1320.5	1317.0	1299.3	1276.2	1263.8
22.5°	1269.1	1269.1	1247.9	1217.7	1205.3
25°	1221.3	1214.2	1194.7	1152.2	1120.3
27.5°	1166.3	1155.7	1134.4	1074.2	1036.9
30°	1106.1	1100.8	1070.6	992.6	964.3
32.5°	1049.3	1040.5	1008.6	927.0	904.0
35°	990.9	983.8	935.9	865.0	843.7
37.5°	932.4	923.5	863.2	806.5	779.9
40°	873.9	863.2	797.6	746.2	717.9
42.5°	818.9	804.7	740.9	686.0	654.1
45°	760.4	744.5	680.7	623.9	599.1
47.5°	701.9	687.7	629.3	570.8	542.4
50°	639.9	627.5	574.3	515.8	485.7
52.5°	588.5	569.0	517.6	459.1	434.3
55°	528.2	512.3	464.4	409.5	388.2
57.5°	473.3	457.3	413.0	361.6	343.9
60°	421.9	398.8	361.6	317.3	303.1
62.5°	365.1	347.4	315.5	278.3	296.0
65°	313.7	296.0	267.7	273.0	226.9
67.5°	257.0	248.2	223.3	198.5	191.4
70°	209.2	198.5	189.7	163.1	156.0
72.5°	166.6	156.0	143.6	129.4	124.1
75°	125.9	117.0	109.9	104.6	115.2
77.5°	86.9	83.3	78.0	72.7	70.9
80°	56.7	54.9	53.2	51.4	49.6
82.5°	33.7	33.7	33.7	33.7	33.7
85°	17.7	19.5	21.3	23.0	24.8
87.5°	10.6	10.6	12.4	14.2	16.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)