

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: P561984

Luminaire Tested: FSR-24-4-LD4-1HI-35-UNV-81-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561984  
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-LD4-1HI-35-UNV-81-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

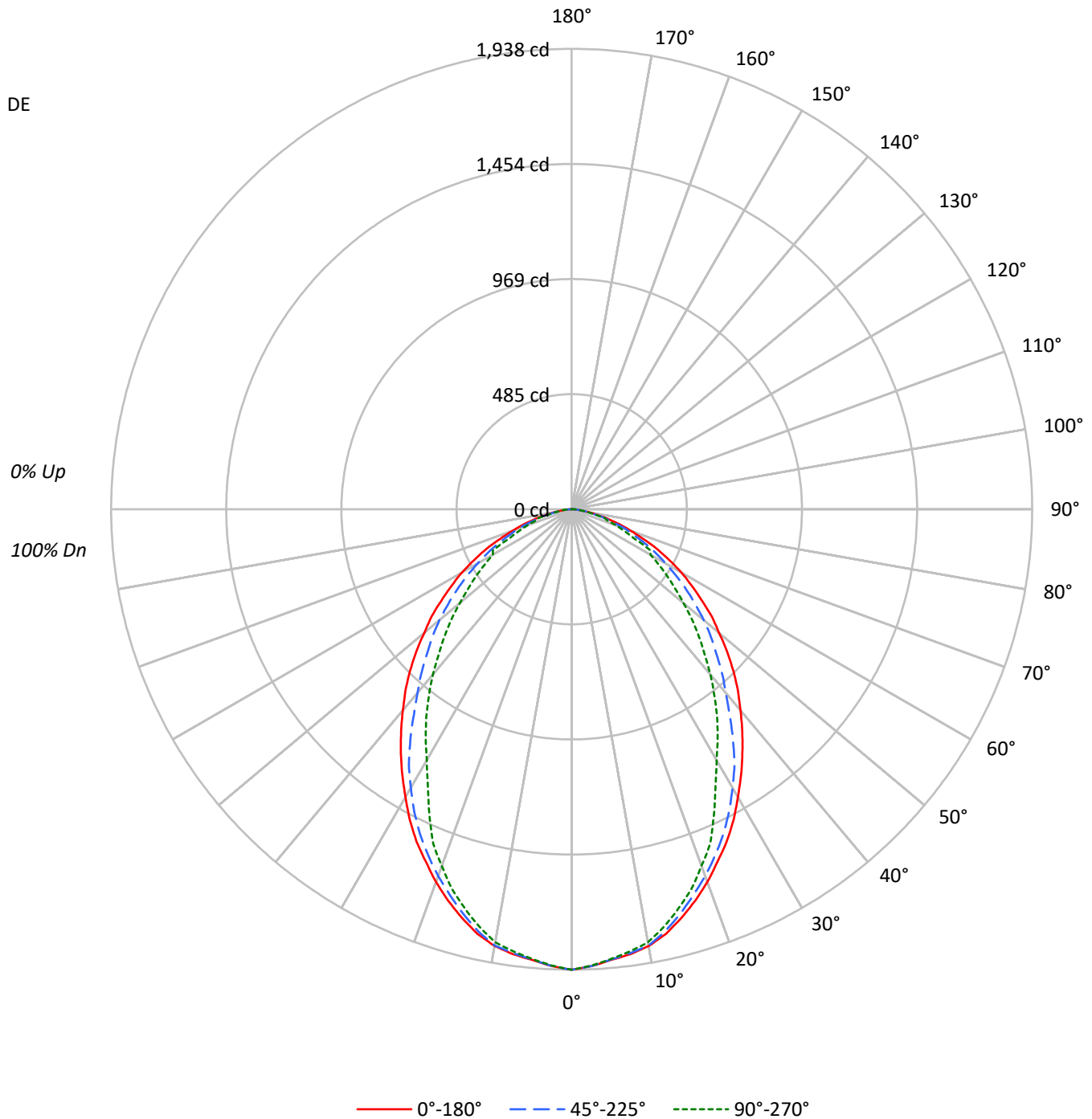
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3805.0 lumens  
Efficiency: N/A  
Efficacy: 88.1 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): 43.2  
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	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°	2608	2608	2608
5°	2572	2569	2566
10°	2550	2547	2529
15°	2481	2456	2422
20°	2390	2352	2288
25°	2292	2242	2102
30°	2172	2103	1894
35°	2057	1943	1752
40°	1940	1771	1594
45°	1829	1637	1441
50°	1693	1520	1285
55°	1566	1377	1151
60°	1435	1230	1031
65°	1263	1077	913
70°	1040	943	776
75°	827	722	757
80°	556	521	486
85°	346	415	485

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1829 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	180.4	4.7
10°-20°	495.2	13.0
20°-30°	685.5	18.0
30°-40°	730.9	19.2
40°-50°	666.8	17.5
50°-60°	522.4	13.7
60°-70°	340.5	8.9
70°-80°	150.9	4.0
80°-90°	32.4	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°	1361.1	35.8
0°-40°	2092.0	55.0
0°-60°	3281.3	86.2
0°-90°	3805.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3805.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1938	1938	1938	1938	1938	
5°	1905	1902	1902	1900	1900	181
15°	1781	1781	1763	1746	1739	501
25°	1544	1535	1510	1456	1416	709
35°	1253	1244	1183	1094	1067	783
45°	961	941	860	789	757	740
55°	668	648	587	518	491	599
65°	397	374	338	345	287	391
75°	159	148	139	132	146	171
85°	22	25	27	29	31	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1938.2	1938.2	1938.2	1938.2	1938.2
2.5°	1924.8	1924.8	1924.8	1922.5	1922.5
5°	1904.6	1902.4	1902.4	1900.1	1900.1
7.5°	1888.9	1886.7	1884.4	1882.2	1877.7
10°	1866.5	1866.5	1864.3	1853.1	1850.8
12.5°	1830.7	1828.4	1819.5	1803.8	1799.3
15°	1781.4	1781.4	1763.4	1745.5	1738.8
17.5°	1727.6	1725.3	1702.9	1685.0	1676.1
20°	1669.3	1664.8	1642.4	1613.3	1597.6
22.5°	1604.4	1604.4	1577.5	1539.4	1523.7
25°	1543.9	1534.9	1510.2	1456.5	1416.1
27.5°	1474.4	1460.9	1434.1	1357.9	1310.8
30°	1398.2	1391.5	1353.4	1254.8	1218.9
32.5°	1326.5	1315.3	1275.0	1171.9	1142.8
35°	1252.6	1243.6	1183.1	1093.5	1066.6
37.5°	1178.6	1167.4	1091.2	1019.5	985.9
40°	1104.7	1091.2	1008.3	943.3	907.5
42.5°	1035.2	1017.3	936.6	867.2	826.8
45°	961.3	941.1	860.4	788.7	757.4
47.5°	887.3	869.4	795.5	721.5	685.7
50°	808.9	793.2	726.0	652.0	614.0
52.5°	743.9	719.3	654.3	580.3	549.0
55°	667.7	647.6	587.1	517.6	490.7
57.5°	598.3	578.1	522.1	457.1	434.7
60°	533.3	504.2	457.1	401.1	383.2
62.5°	461.6	439.2	398.8	351.8	374.2
65°	396.6	374.2	338.3	345.1	286.8
67.5°	324.9	313.7	282.3	251.0	242.0
70°	264.4	251.0	239.8	206.1	197.2
72.5°	210.6	197.2	181.5	163.6	156.8
75°	159.1	147.9	138.9	132.2	145.6
77.5°	109.8	105.3	98.6	91.9	89.6
80°	71.7	69.5	67.2	65.0	62.7
82.5°	42.6	42.6	42.6	42.6	42.6
85°	22.4	24.6	26.9	29.1	31.4
87.5°	13.4	13.4	15.7	17.9	20.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)