

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: P562311

Luminaire Tested: FSR-24-4-LD4-1STD-35-UNV-81-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562311  
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-81-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

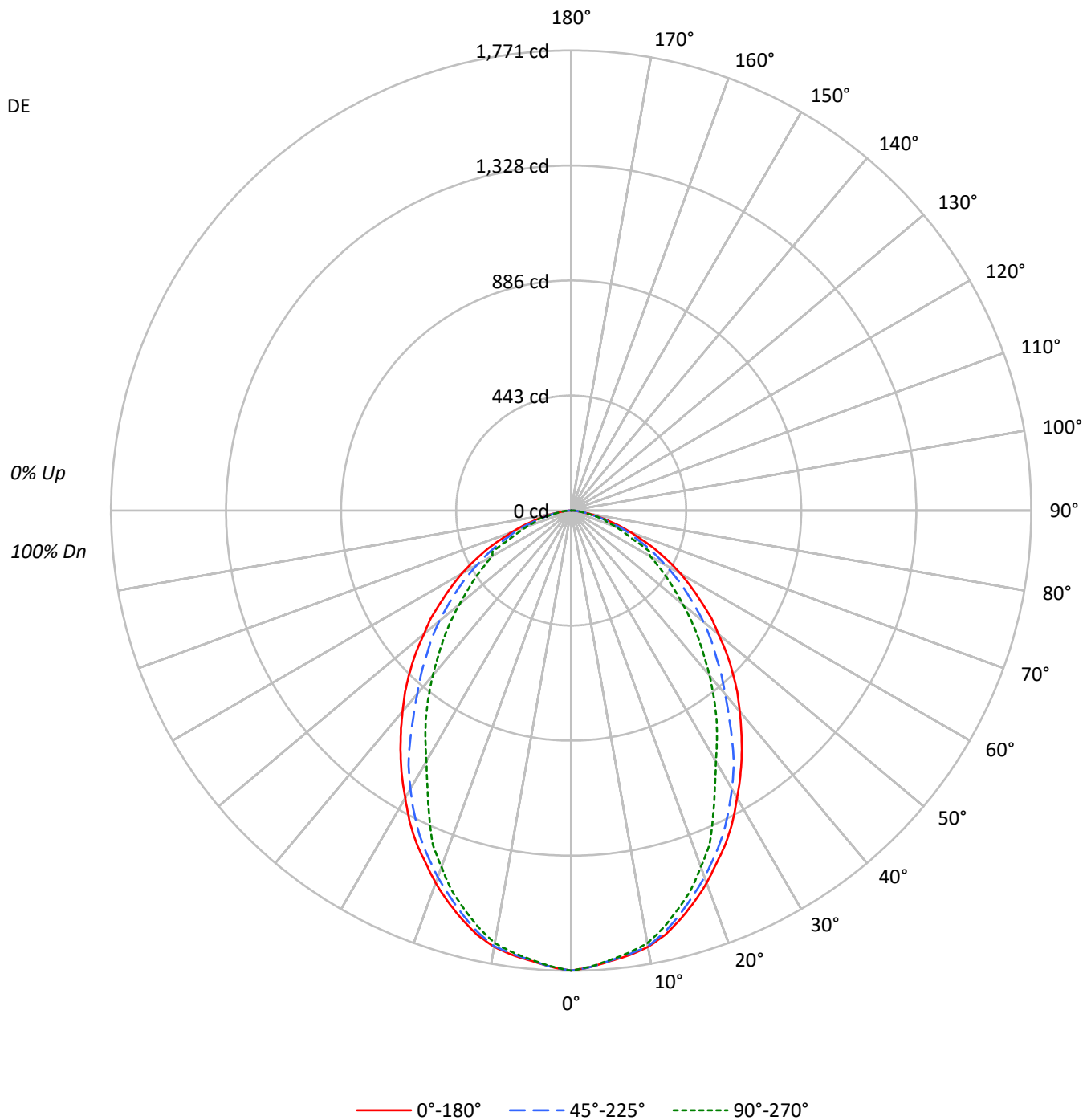
Lumens per Lamp: N/A  
Luminaire Lumens: 3476.0 lumens  
Efficiency: N/A  
Efficacy: 104.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2382	2382	2382
5°	2350	2347	2344
10°	2330	2327	2310
15°	2267	2244	2213
20°	2184	2148	2090
25°	2094	2048	1921
30°	1984	1921	1730
35°	1880	1775	1600
40°	1773	1618	1456
45°	1671	1496	1317
50°	1547	1388	1174
55°	1431	1258	1052
60°	1311	1124	942
65°	1153	984	834
70°	950	862	709
75°	755	660	692
80°	508	476	444
85°	316	380	443

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1671 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.8	4.7
10°-20°	452.3	13.0
20°-30°	626.2	18.0
30°-40°	667.8	19.2
40°-50°	609.2	17.5
50°-60°	477.2	13.7
60°-70°	311.0	8.9
70°-80°	137.8	4.0
80°-90°	29.6	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°	1243.4	35.8
0°-40°	1911.2	55.0
0°-60°	2997.6	86.2
0°-90°	3476.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3476.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1771	1771	1771	1771	1771	
5°	1740	1738	1738	1736	1736	165
15°	1627	1627	1611	1595	1588	457
25°	1410	1402	1380	1330	1294	647
35°	1144	1136	1081	999	974	715
45°	878	860	786	720	692	676
55°	610	592	536	473	448	547
65°	362	342	309	315	262	357
75°	145	135	127	121	133	156
85°	20	22	25	27	29	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1770.6	1770.6	1770.6	1770.6	1770.6
2.5°	1758.3	1758.3	1758.3	1756.3	1756.3
5°	1739.9	1737.9	1737.9	1735.8	1735.8
7.5°	1725.6	1723.5	1721.5	1719.5	1715.4
10°	1705.1	1705.1	1703.1	1692.8	1690.8
12.5°	1672.4	1670.3	1662.1	1647.8	1643.7
15°	1627.3	1627.3	1611.0	1594.6	1588.4
17.5°	1578.2	1576.2	1555.7	1539.3	1531.1
20°	1525.0	1520.9	1500.4	1473.8	1459.5
22.5°	1465.6	1465.6	1441.1	1406.3	1391.9
25°	1410.4	1402.2	1379.7	1330.5	1293.7
27.5°	1346.9	1334.6	1310.1	1240.5	1197.5
30°	1277.3	1271.2	1236.4	1146.3	1113.6
32.5°	1211.8	1201.6	1164.7	1070.6	1044.0
35°	1144.3	1136.1	1080.8	998.9	974.4
37.5°	1076.7	1066.5	996.9	931.4	900.7
40°	1009.2	996.9	921.1	861.8	829.0
42.5°	945.7	929.3	855.6	792.2	755.3
45°	878.1	859.7	786.0	720.5	691.9
47.5°	810.6	794.2	726.7	659.1	626.4
50°	739.0	724.6	663.2	595.7	560.9
52.5°	679.6	657.1	597.7	530.2	501.5
55°	610.0	591.6	536.3	472.8	448.3
57.5°	546.5	528.1	476.9	417.6	397.1
60°	487.2	460.6	417.6	366.4	350.0
62.5°	421.7	401.2	364.4	321.4	341.8
65°	362.3	341.8	309.1	315.2	262.0
67.5°	296.8	286.6	257.9	229.3	221.1
70°	241.5	229.3	219.0	188.3	180.1
72.5°	192.4	180.1	165.8	149.4	143.3
75°	145.3	135.1	126.9	120.8	133.1
77.5°	100.3	96.2	90.1	83.9	81.9
80°	65.5	63.5	61.4	59.4	57.3
82.5°	38.9	38.9	38.9	38.9	38.9
85°	20.5	22.5	24.6	26.6	28.7
87.5°	12.3	12.3	14.3	16.4	18.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)