

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: P561153

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561153  
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-12-4-LD4-1STD-35-UNV-81-84-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

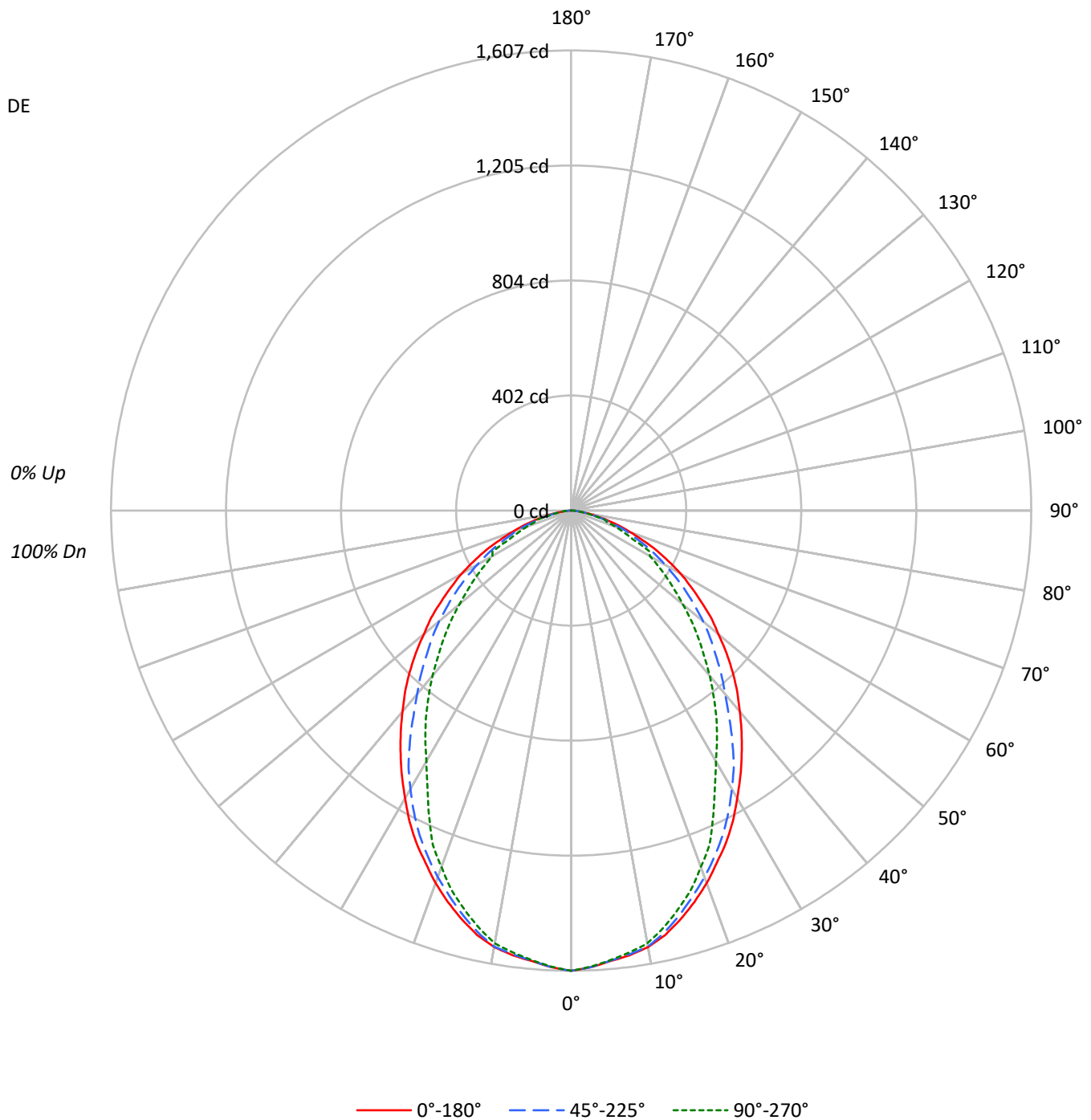
Lumens per Lamp: N/A  
Luminaire Lumens: 3155.0 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4325	4325	4325
5°	4266	4261	4256
10°	4229	4224	4194
15°	4115	4074	4017
20°	3964	3900	3794
25°	3801	3718	3486
30°	3603	3487	3141
35°	3412	3223	2905
40°	3218	2937	2643
45°	3033	2715	2390
50°	2808	2520	2131
55°	2598	2284	1909
60°	2380	2040	1710
65°	2094	1786	1514
70°	1725	1564	1286
75°	1371	1198	1256
80°	922	863	806
85°	574	689	803

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3033 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.6	4.7
10°-20°	410.6	13.0
20°-30°	568.4	18.0
30°-40°	606.1	19.2
40°-50°	552.9	17.5
50°-60°	433.2	13.7
60°-70°	282.3	8.9
70°-80°	125.1	4.0
80°-90°	26.9	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°	1128.6	35.8
0°-40°	1734.7	55.0
0°-60°	2720.8	86.2
0°-90°	3155.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3155.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1607	1607	1607	1607	1607	
5°	1579	1577	1577	1576	1576	150
15°	1477	1477	1462	1447	1442	415
25°	1280	1273	1252	1208	1174	588
35°	1039	1031	981	907	884	649
45°	797	780	713	654	628	614
55°	554	537	487	429	407	497
65°	329	310	280	286	238	324
75°	132	123	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°	1607.1	1607.1	1607.1	1607.1	1607.1
2.5°	1596.0	1596.0	1596.0	1594.1	1594.1
5°	1579.2	1577.4	1577.4	1575.5	1575.5
7.5°	1566.2	1564.4	1562.5	1560.7	1557.0
10°	1547.7	1547.7	1545.8	1536.5	1534.7
12.5°	1517.9	1516.1	1508.6	1495.6	1491.9
15°	1477.1	1477.1	1462.2	1447.3	1441.8
17.5°	1432.5	1430.6	1412.0	1397.2	1389.7
20°	1384.2	1380.4	1361.9	1337.7	1324.7
22.5°	1330.3	1330.3	1308.0	1276.4	1263.4
25°	1280.1	1272.7	1252.2	1207.7	1174.2
27.5°	1222.5	1211.4	1189.1	1125.9	1086.9
30°	1159.4	1153.8	1122.2	1040.4	1010.7
32.5°	1099.9	1090.6	1057.2	971.7	947.5
35°	1038.6	1031.2	981.0	906.7	884.4
37.5°	977.3	968.0	904.8	845.4	817.5
40°	916.0	904.8	836.1	782.2	752.5
42.5°	858.4	843.5	776.6	719.0	685.6
45°	797.1	780.3	713.4	654.0	628.0
47.5°	735.7	720.9	659.6	598.3	568.5
50°	670.7	657.7	602.0	540.7	509.1
52.5°	616.8	596.4	542.5	481.2	455.2
55°	553.7	536.9	486.8	429.2	406.9
57.5°	496.1	479.3	432.9	379.0	360.4
60°	442.2	418.0	379.0	332.6	317.7
62.5°	382.7	364.2	330.7	291.7	310.3
65°	328.9	310.3	280.5	286.1	237.8
67.5°	269.4	260.1	234.1	208.1	200.7
70°	219.2	208.1	198.8	170.9	163.5
72.5°	174.6	163.5	150.5	135.6	130.1
75°	131.9	122.6	115.2	109.6	120.8
77.5°	91.0	87.3	81.7	76.2	74.3
80°	59.5	57.6	55.7	53.9	52.0
82.5°	35.3	35.3	35.3	35.3	35.3
85°	18.6	20.4	22.3	24.2	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)