

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: P561229

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-81-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561229  
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-40-UNV-81-96-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

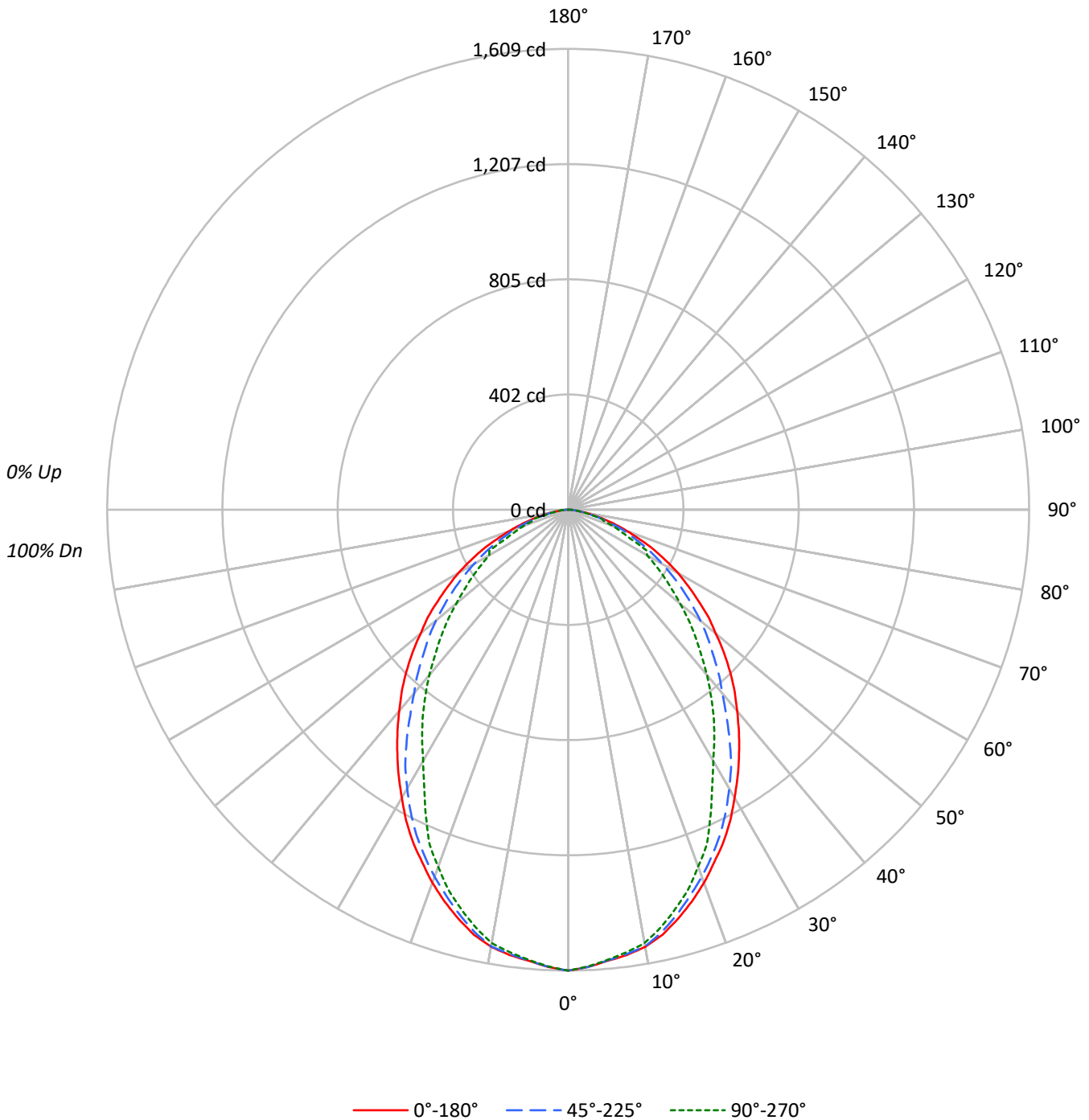
Lumens per Lamp: N/A  
Luminaire Lumens: 3159.0 lumens  
Efficiency: N/A  
Efficacy: 94.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4330	4330	4330
5°	4271	4266	4261
10°	4234	4229	4199
15°	4120	4079	4022
20°	3969	3905	3798
25°	3806	3723	3491
30°	3607	3491	3145
35°	3416	3227	2909
40°	3222	2941	2647
45°	3037	2719	2393
50°	2812	2523	2134
55°	2601	2287	1911
60°	2383	2042	1712
65°	2097	1789	1516
70°	1727	1566	1288
75°	1373	1199	1257
80°	922	865	807
85°	574	689	803

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3037 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.8	4.7
10°-20°	411.1	13.0
20°-30°	569.1	18.0
30°-40°	606.8	19.2
40°-50°	553.6	17.5
50°-60°	433.7	13.7
60°-70°	282.7	8.9
70°-80°	125.2	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°	1130.0	35.8
0°-40°	1736.8	55.0
0°-60°	2724.2	86.2
0°-90°	3159.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3159.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1609	1609	1609	1609	1609	
5°	1581	1579	1579	1578	1578	150
15°	1479	1479	1464	1449	1444	416
25°	1282	1274	1254	1209	1176	588
35°	1040	1032	982	908	886	650
45°	798	781	714	655	629	615
55°	554	538	487	430	407	497
65°	329	311	281	286	238	324
75°	132	123	115	110	121	142
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°	1609.2	1609.2	1609.2	1609.2	1609.2
2.5°	1598.0	1598.0	1598.0	1596.1	1596.1
5°	1581.2	1579.4	1579.4	1577.5	1577.5
7.5°	1568.2	1566.4	1564.5	1562.6	1558.9
10°	1549.6	1549.6	1547.8	1538.5	1536.6
12.5°	1519.9	1518.0	1510.6	1497.5	1493.8
15°	1478.9	1478.9	1464.0	1449.2	1443.6
17.5°	1434.3	1432.4	1413.8	1398.9	1391.5
20°	1385.9	1382.2	1363.6	1339.4	1326.4
22.5°	1332.0	1332.0	1309.6	1278.0	1265.0
25°	1281.7	1274.3	1253.8	1209.2	1175.7
27.5°	1224.1	1212.9	1190.6	1127.3	1088.3
30°	1160.8	1155.2	1123.6	1041.8	1012.0
32.5°	1101.3	1092.0	1058.5	972.9	948.7
35°	1039.9	1032.5	982.2	907.8	885.5
37.5°	978.5	969.2	906.0	846.4	818.5
40°	917.1	906.0	837.1	783.2	753.4
42.5°	859.5	844.6	777.6	719.9	686.4
45°	798.1	781.3	714.4	654.8	628.8
47.5°	736.7	721.8	660.4	599.0	569.2
50°	671.6	658.5	602.7	541.3	509.7
52.5°	617.6	597.2	543.2	481.8	455.8
55°	554.4	537.6	487.4	429.7	407.4
57.5°	496.7	480.0	433.4	379.5	360.9
60°	442.7	418.6	379.5	333.0	318.1
62.5°	383.2	364.6	331.1	292.1	310.7
65°	329.3	310.7	280.9	286.5	238.1
67.5°	269.7	260.4	234.4	208.4	200.9
70°	219.5	208.4	199.1	171.1	163.7
72.5°	174.9	163.7	150.7	135.8	130.2
75°	132.1	122.8	115.3	109.8	120.9
77.5°	91.2	87.4	81.9	76.3	74.4
80°	59.5	57.7	55.8	53.9	52.1
82.5°	35.3	35.3	35.3	35.3	35.3
85°	18.6	20.5	22.3	24.2	26.0
87.5°	11.2	11.2	13.0	14.9	16.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)