

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: P561807

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-81-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561807  
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-LD4-2STD-40-UNV-81-97-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

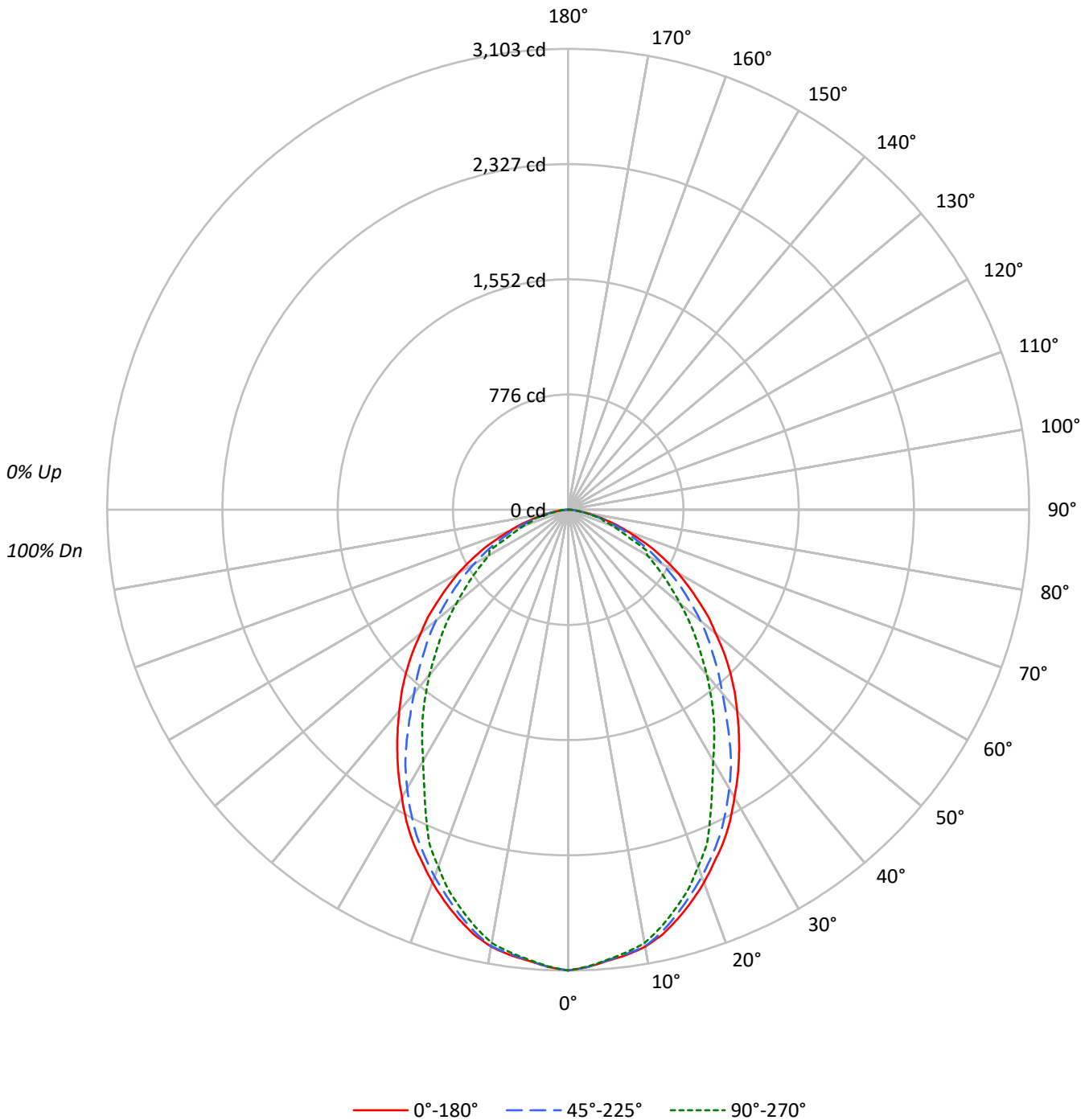
Lumens per Lamp: N/A  
Luminaire Lumens: 6091.0 lumens  
Efficiency: N/A  
Efficacy: 91.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	8349	8349	8349
5°	8236	8226	8216
10°	8164	8155	8096
15°	7944	7864	7754
20°	7652	7529	7324
25°	7338	7178	6731
30°	6955	6732	6063
35°	6587	6222	5609
40°	6212	5670	5103
45°	5856	5242	4614
50°	5421	4865	4114
55°	5015	4409	3685
60°	4595	3938	3301
65°	4043	3449	2923
70°	3330	3020	2483
75°	2648	2312	2424
80°	1779	1667	1556
85°	1108	1328	1550

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5856 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	288.8	4.7
10°-20°	792.6	13.0
20°-30°	1097.4	18.0
30°-40°	1170.1	19.2
40°-50°	1067.5	17.5
50°-60°	836.3	13.7
60°-70°	545.0	8.9
70°-80°	241.5	4.0
80°-90°	51.9	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°	2178.8	35.8
0°-40°	3348.9	55.0
0°-60°	5252.6	86.2
0°-90°	6091.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6091.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3103	3103	3103	3103	3103	
5°	3049	3045	3045	3042	3042	289
15°	2852	2852	2823	2794	2783	802
25°	2471	2457	2418	2332	2267	1135
35°	2005	1991	1894	1750	1707	1254
45°	1539	1506	1377	1263	1212	1185
55°	1069	1037	940	829	786	959
65°	635	599	542	552	459	626
75°	255	237	222	212	233	273
85°	36	40	43	47	50	50
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3102.7	3102.7	3102.7	3102.7	3102.7
2.5°	3081.2	3081.2	3081.2	3077.6	3077.6
5°	3048.9	3045.3	3045.3	3041.7	3041.7
7.5°	3023.8	3020.2	3016.6	3013.0	3005.8
10°	2987.9	2987.9	2984.3	2966.4	2962.8
12.5°	2930.5	2926.9	2912.6	2887.5	2880.3
15°	2851.6	2851.6	2822.9	2794.2	2783.4
17.5°	2765.5	2761.9	2726.0	2697.4	2683.0
20°	2672.2	2665.1	2629.2	2582.6	2557.5
22.5°	2568.2	2568.2	2525.2	2464.2	2439.1
25°	2471.4	2457.0	2417.6	2331.5	2266.9
27.5°	2360.2	2338.7	2295.6	2173.7	2098.3
30°	2238.2	2227.5	2166.5	2008.7	1951.3
32.5°	2123.4	2105.5	2040.9	1876.0	1829.3
35°	2005.1	1990.7	1893.9	1750.4	1707.4
37.5°	1886.7	1868.8	1746.8	1632.0	1578.2
40°	1768.3	1746.8	1614.1	1510.1	1452.7
42.5°	1657.2	1628.5	1499.3	1388.1	1323.6
45°	1538.8	1506.5	1377.4	1262.6	1212.4
47.5°	1420.4	1391.7	1273.4	1155.0	1097.6
50°	1294.9	1269.8	1162.2	1043.8	982.8
52.5°	1190.9	1151.4	1047.4	929.0	878.8
55°	1068.9	1036.6	939.8	828.6	785.5
57.5°	957.7	925.4	835.7	731.7	695.9
60°	853.7	807.1	731.7	642.1	613.4
62.5°	738.9	703.0	638.5	563.1	599.0
65°	634.9	599.0	541.6	552.4	459.1
67.5°	520.1	502.2	452.0	401.7	387.4
70°	423.3	401.7	383.8	330.0	315.6
72.5°	337.2	315.6	290.5	261.8	251.1
75°	254.7	236.7	222.4	211.6	233.1
77.5°	175.8	168.6	157.8	147.1	143.5
80°	114.8	111.2	107.6	104.0	100.4
82.5°	68.2	68.2	68.2	68.2	68.2
85°	35.9	39.5	43.0	46.6	50.2
87.5°	21.5	21.5	25.1	28.7	32.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)