

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: P590115

Luminaire Tested: FSR-24-2-LD4-1STD-50-UNV-81-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590115  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-1STD-50-UNV-81-96-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

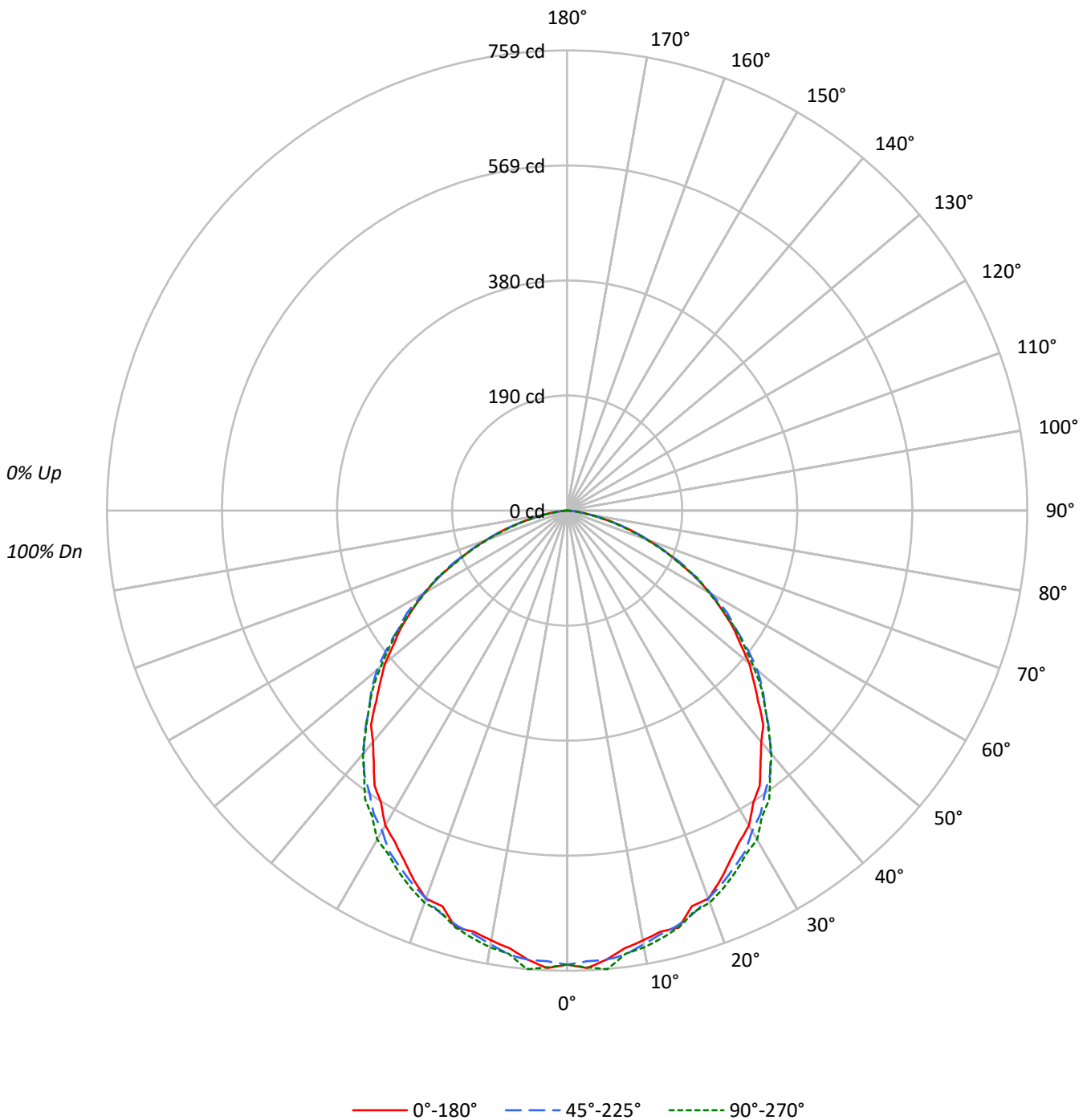
Lumens per Lamp: N/A  
Luminaire Lumens: 1887.0 lumens  
Efficiency: N/A  
Efficacy: 113.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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																		
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																												
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86																												
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73																												
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62																												
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53																												
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46																												
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41																												
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36																												
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32																												
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29																												
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2015	2015	2015
5°	2008	2009	2051
10°	1967	1985	1999
15°	1983	1972	1983
20°	1950	1950	1970
25°	1890	1931	1952
30°	1863	1896	1947
35°	1820	1867	1909
40°	1749	1833	1841
45°	1696	1756	1759
50°	1640	1714	1682
55°	1563	1593	1582
60°	1461	1476	1449
65°	1303	1337	1294
70°	1118	1122	1090
75°	886	884	849
80°	594	576	555
85°	321	318	299

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1802 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	70.4	3.7
10°-20°	199.6	10.6
20°-30°	299.0	15.8
30°-40°	354.4	18.8
40°-50°	355.1	18.8
50°-60°	301.4	16.0
60°-70°	203.2	10.8
70°-80°	89.3	4.7
80°-90°	14.5	0.8
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°	569.1	30.2
0°-40°	923.5	48.9
0°-60°	1580.0	83.7
0°-90°	1887.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1887.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	749	749	749	749	749	
5°	743	742	744	742	759	70
15°	712	704	708	712	712	198
25°	636	640	650	659	658	294
35°	554	556	568	582	581	344
45°	446	454	462	473	462	345
55°	333	331	340	337	337	296
65°	205	202	210	202	203	204
75°	85	83	85	79	82	91
85°	10	10	10	10	10	15
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	748.7	748.7	748.7	748.7	748.7
2.5°	755.2	749.5	744.2	750.4	754.1
5°	743.4	741.7	743.7	741.5	759.3
7.5°	728.1	734.8	738.7	736.2	737.3
10°	720.0	717.7	726.3	732.3	731.4
12.5°	711.3	714.8	715.3	721.7	722.3
15°	711.8	703.6	707.9	711.6	711.9
17.5°	684.1	693.0	696.0	704.4	694.0
20°	680.8	674.3	680.8	689.4	688.0
22.5°	660.0	652.7	666.6	674.3	673.8
25°	636.4	639.9	650.3	658.8	657.5
27.5°	615.7	619.8	634.6	646.3	638.8
30°	599.7	597.7	610.3	620.7	626.5
32.5°	571.2	578.6	593.3	603.6	598.1
35°	553.9	555.6	568.4	581.6	581.2
37.5°	523.7	531.3	549.4	553.1	549.7
40°	497.9	505.5	521.8	525.8	524.1
42.5°	478.8	480.2	494.2	498.7	491.5
45°	445.7	454.0	461.5	473.4	462.2
47.5°	417.4	421.3	437.5	440.7	434.8
50°	391.8	393.2	409.5	405.5	401.7
52.5°	359.6	365.3	374.5	373.7	369.2
55°	333.1	330.9	339.6	337.3	337.2
57.5°	301.3	305.2	312.3	308.7	302.8
60°	271.5	271.6	274.3	270.1	269.3
62.5°	238.4	239.5	240.1	235.0	243.3
65°	204.7	201.9	209.9	201.8	203.2
67.5°	173.6	175.0	174.2	169.2	171.1
70°	142.1	143.8	142.6	136.9	138.6
72.5°	113.3	111.2	112.5	105.4	108.7
75°	85.2	83.4	85.0	79.0	81.7
77.5°	58.0	59.4	58.4	55.2	57.0
80°	38.3	37.2	37.2	35.4	35.8
82.5°	22.3	21.3	21.0	20.4	21.3
85°	10.4	10.2	10.3	10.1	9.7
87.5°	3.8	3.9	3.9	3.7	3.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)