

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: P590481

Luminaire Tested: FSR-24-2-LD4-3HI-40-UNV-93-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590481  
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-LD4-3HI-40-UNV-93-88-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

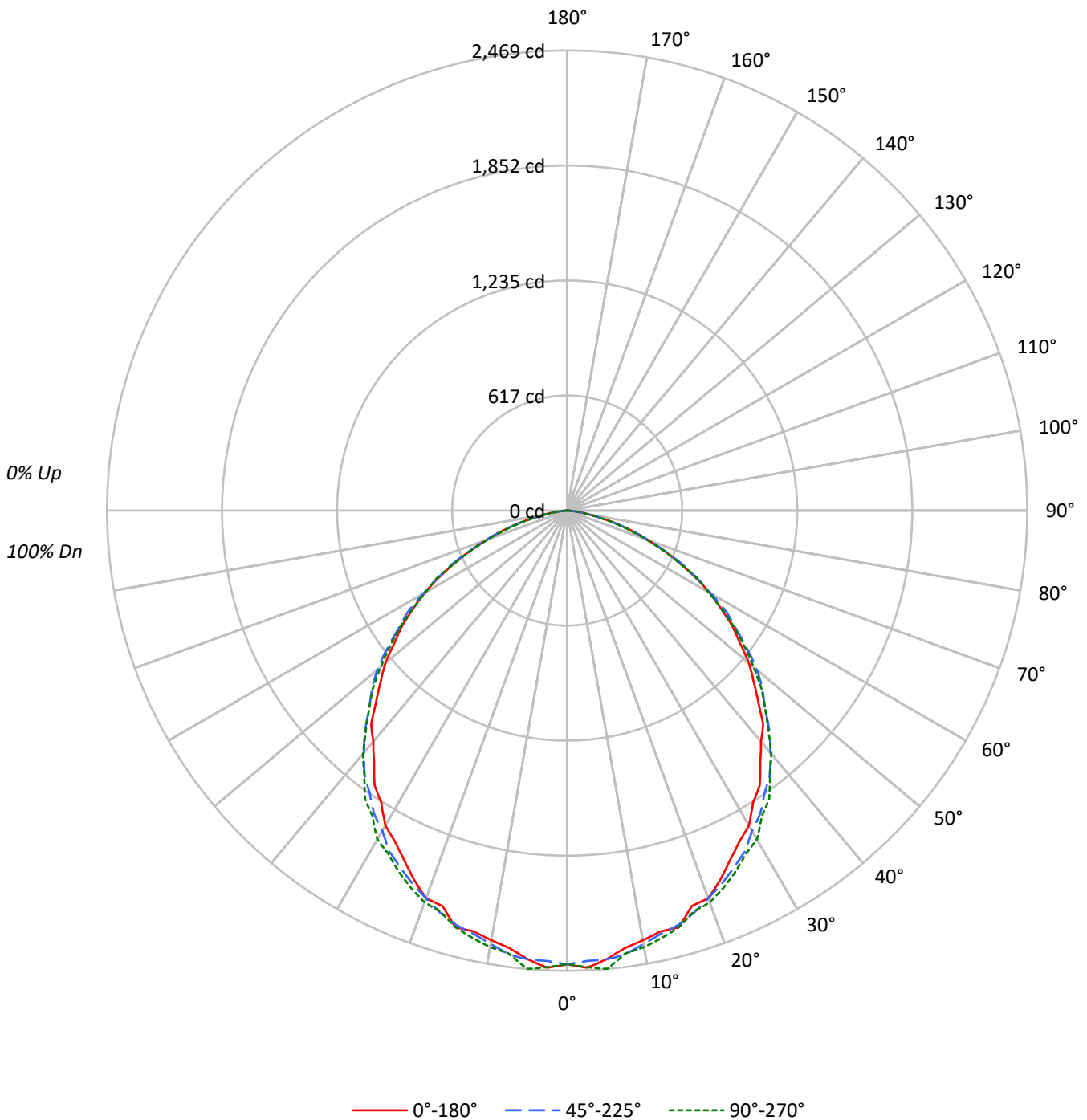
Lumens per Lamp: N/A  
Luminaire Lumens: 6135.0 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86				86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73				73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62				62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53				53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46				46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41				41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36				36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32				32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29				29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26				26

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

	0°	45°	90°
0°	6550	6550	6550
5°	6529	6531	6669
10°	6396	6452	6498
15°	6447	6412	6448
20°	6338	6338	6405
25°	6143	6278	6347
30°	6059	6165	6329
35°	5916	6071	6207
40°	5686	5960	5986
45°	5514	5710	5718
50°	5333	5574	5467
55°	5081	5180	5143
60°	4752	4799	4712
65°	4237	4344	4206
70°	3635	3648	3546
75°	2879	2873	2761
80°	1929	1875	1802
85°	1047	1037	969

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5857 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	229.0	3.7
10°-20°	648.9	10.6
20°-30°	972.2	15.8
30°-40°	1152.3	18.8
40°-50°	1154.4	18.8
50°-60°	979.9	16.0
60°-70°	660.7	10.8
70°-80°	290.3	4.7
80°-90°	47.2	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°	1850.2	30.2
0°-40°	3002.5	48.9
0°-60°	5136.9	83.7
0°-90°	6135.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6135.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2434	2434	2434	2434	2434	
5°	2417	2411	2418	2411	2469	228
15°	2314	2287	2302	2314	2314	645
25°	2069	2080	2114	2142	2138	957
35°	1801	1806	1848	1891	1890	1118
45°	1449	1476	1500	1539	1503	1121
55°	1083	1076	1104	1097	1096	963
65°	665	657	682	656	661	662
75°	277	271	276	257	266	297
85°	34	33	34	33	31	49
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2434.2	2434.2	2434.2	2434.2	2434.2
2.5°	2455.3	2436.7	2419.4	2439.6	2451.8
5°	2416.9	2411.3	2417.9	2410.6	2468.8
7.5°	2367.3	2389.0	2401.5	2393.7	2397.1
10°	2340.9	2333.3	2361.3	2380.8	2378.0
12.5°	2312.6	2323.9	2325.5	2346.5	2348.4
15°	2314.2	2287.4	2301.6	2313.5	2314.5
17.5°	2224.3	2253.2	2262.9	2290.3	2256.3
20°	2213.3	2192.2	2213.3	2241.2	2236.8
22.5°	2145.7	2122.1	2167.4	2192.2	2190.6
25°	2069.0	2080.3	2114.3	2141.9	2137.5
27.5°	2001.7	2014.9	2063.3	2101.4	2076.9
30°	1949.9	1943.3	1984.1	2018.1	2036.9
32.5°	1857.2	1881.1	1928.8	1962.5	1944.5
35°	1800.9	1806.3	1848.1	1890.8	1889.5
37.5°	1702.5	1727.4	1786.1	1798.1	1787.1
40°	1618.6	1643.4	1696.6	1709.4	1704.1
42.5°	1556.7	1561.1	1606.7	1621.4	1597.9
45°	1448.9	1475.9	1500.4	1539.1	1502.6
47.5°	1357.1	1369.7	1422.5	1432.9	1413.7
50°	1273.8	1278.2	1331.4	1318.5	1305.9
52.5°	1169.2	1187.7	1217.6	1215.1	1200.3
55°	1083.1	1075.8	1104.1	1096.6	1096.3
57.5°	979.7	992.2	1015.5	1003.5	984.4
60°	882.9	883.2	891.7	878.1	875.6
62.5°	775.1	778.8	780.7	764.1	791.1
65°	665.4	656.6	682.3	656.2	660.6
67.5°	564.5	568.9	566.4	550.0	556.3
70°	462.0	467.7	463.6	445.0	450.7
72.5°	368.4	361.4	365.8	342.6	353.3
75°	276.9	271.2	276.3	256.8	265.6
77.5°	188.6	193.0	189.8	179.5	185.4
80°	124.5	121.0	121.0	115.0	116.3
82.5°	72.6	69.1	68.2	66.3	69.1
85°	33.9	33.0	33.6	32.7	31.4
87.5°	12.3	12.6	12.6	11.9	11.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)