

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: P589899

Luminaire Tested: FSR-24-2-LD4-1HI-40-UNV-82-96-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589899  
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-LD4-1HI-40-UNV-82-96-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

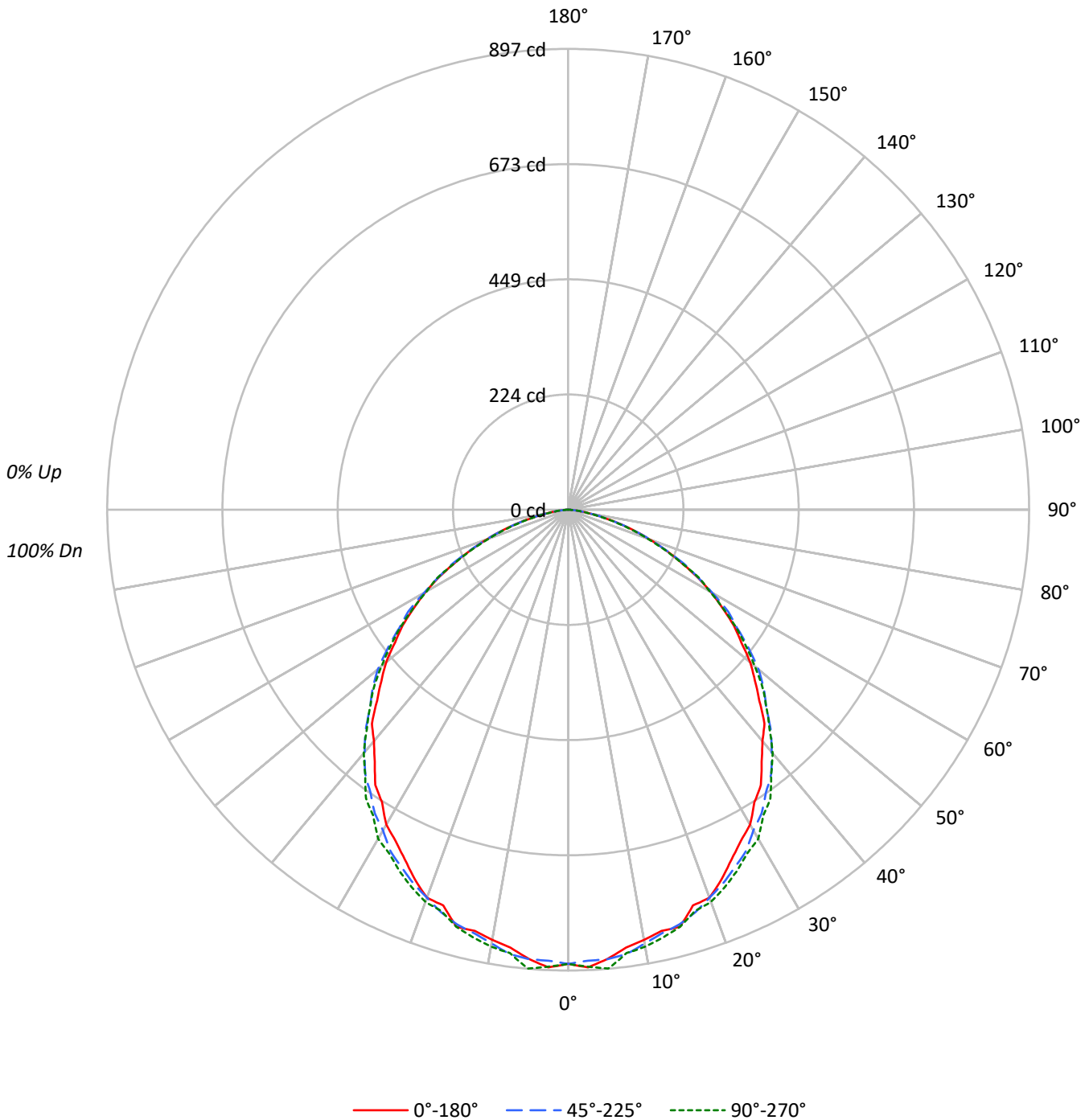
Lumens per Lamp: N/A  
Luminaire Lumens: 2228.0 lumens  
Efficiency: N/A  
Efficacy: 103.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	2379	2379	2379
5°	2371	2372	2422
10°	2323	2343	2360
15°	2341	2328	2342
20°	2302	2302	2326
25°	2231	2280	2305
30°	2200	2239	2298
35°	2148	2205	2254
40°	2065	2164	2174
45°	2003	2074	2077
50°	1937	2024	1986
55°	1845	1881	1868
60°	1725	1743	1711
65°	1538	1578	1528
70°	1320	1325	1288
75°	1046	1043	1002
80°	700	680	654
85°	380	377	352

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2127 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	83.2	3.7
10°-20°	235.7	10.6
20°-30°	353.1	15.8
30°-40°	418.5	18.8
40°-50°	419.2	18.8
50°-60°	355.9	16.0
60°-70°	239.9	10.8
70°-80°	105.4	4.7
80°-90°	17.1	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°	671.9	30.2
0°-40°	1090.4	48.9
0°-60°	1865.5	83.7
0°-90°	2228.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2228.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	884	884	884	884	884	
5°	878	876	878	876	897	83
15°	840	831	836	840	840	234
25°	751	756	768	778	776	347
35°	654	656	671	687	686	406
45°	526	536	545	559	546	407
55°	393	391	401	398	398	350
65°	242	238	248	238	240	240
75°	101	98	100	93	96	108
85°	12	12	12	12	11	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	884.0	884.0	884.0	884.0	884.0
2.5°	891.7	884.9	878.6	886.0	890.4
5°	877.7	875.7	878.1	875.5	896.6
7.5°	859.7	867.6	872.1	869.3	870.5
10°	850.1	847.4	857.5	864.6	863.6
12.5°	839.8	844.0	844.5	852.2	852.9
15°	840.4	830.7	835.8	840.2	840.5
17.5°	807.8	818.3	821.8	831.7	819.4
20°	803.8	796.1	803.8	813.9	812.3
22.5°	779.2	770.7	787.1	796.1	795.6
25°	751.4	755.5	767.8	777.9	776.3
27.5°	727.0	731.8	749.3	763.1	754.2
30°	708.1	705.7	720.6	732.9	739.7
32.5°	674.5	683.1	700.5	712.7	706.2
35°	654.0	656.0	671.1	686.7	686.2
37.5°	618.3	627.3	648.7	653.0	649.0
40°	587.8	596.8	616.1	620.8	618.9
42.5°	565.3	566.9	583.5	588.8	580.3
45°	526.2	536.0	544.9	558.9	545.7
47.5°	492.9	497.4	516.6	520.4	513.4
50°	462.6	464.2	483.5	478.8	474.3
52.5°	424.6	431.3	442.2	441.3	435.9
55°	393.3	390.7	401.0	398.2	398.1
57.5°	355.8	360.3	368.8	364.4	357.5
60°	320.6	320.7	323.8	318.9	318.0
62.5°	281.5	282.8	283.5	277.5	287.3
65°	241.6	238.4	247.8	238.3	239.9
67.5°	205.0	206.6	205.7	199.7	202.0
70°	167.8	169.8	168.4	161.6	163.7
72.5°	133.8	131.3	132.9	124.4	128.3
75°	100.6	98.5	100.3	93.3	96.4
77.5°	68.5	70.1	68.9	65.2	67.3
80°	45.2	43.9	43.9	41.8	42.2
82.5°	26.4	25.1	24.8	24.1	25.1
85°	12.3	12.0	12.2	11.9	11.4
87.5°	4.5	4.6	4.6	4.3	4.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)