

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: P590091

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

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590091  
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-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**

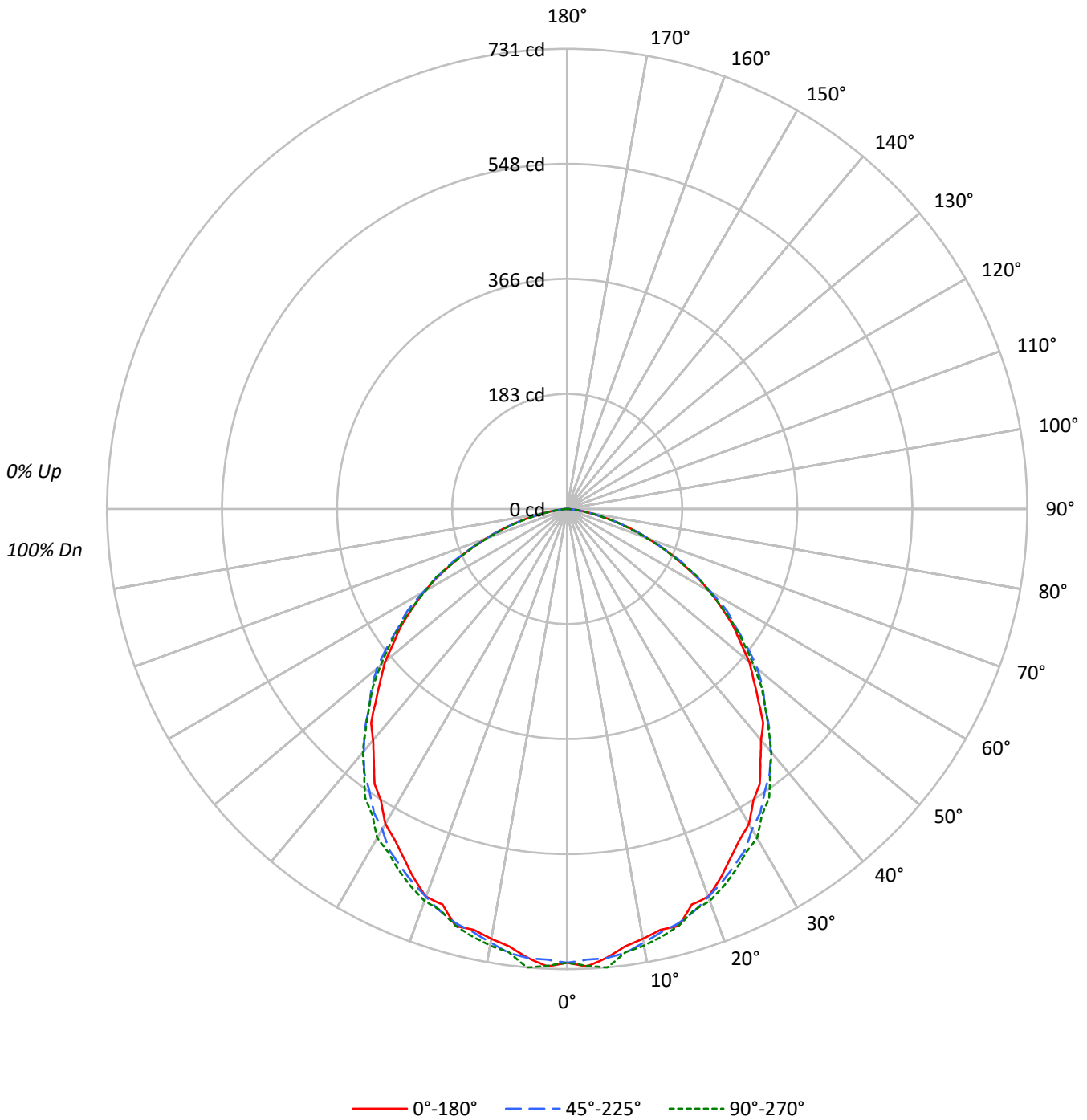
Lumens per Lamp: N/A  
Luminaire Lumens: 1817.0 lumens  
Efficiency: N/A  
Efficacy: 109.5 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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				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				
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°	1940	1940	1940
5°	1934	1934	1975
10°	1894	1911	1924
15°	1909	1899	1910
20°	1877	1877	1897
25°	1820	1859	1880
30°	1794	1826	1875
35°	1752	1798	1838
40°	1684	1765	1773
45°	1633	1691	1694
50°	1580	1651	1619
55°	1505	1534	1523
60°	1407	1421	1396
65°	1255	1287	1246
70°	1076	1080	1050
75°	853	850	818
80°	572	555	533
85°	312	309	287

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1735 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.8	3.7
10°-20°	192.2	10.6
20°-30°	288.0	15.8
30°-40°	341.3	18.8
40°-50°	341.9	18.8
50°-60°	290.2	16.0
60°-70°	195.7	10.8
70°-80°	86.0	4.7
80°-90°	14.0	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°	548.0	30.2
0°-40°	889.2	48.9
0°-60°	1521.4	83.7
0°-90°	1817.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1817.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	721	721	721	721	721	
5°	716	714	716	714	731	67
15°	685	678	682	685	686	191
25°	613	616	626	634	633	283
35°	533	535	547	560	560	331
45°	429	437	444	456	445	332
55°	321	319	327	325	325	285
65°	197	194	202	194	196	196
75°	82	80	82	76	79	88
85°	10	10	10	10	9	15
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	720.9	720.9	720.9	720.9	720.9
2.5°	727.2	721.7	716.6	722.5	726.2
5°	715.8	714.1	716.1	714.0	731.2
7.5°	701.1	707.5	711.3	708.9	710.0
10°	693.3	691.1	699.3	705.1	704.3
12.5°	684.9	688.3	688.7	695.0	695.5
15°	685.4	677.5	681.7	685.2	685.5
17.5°	658.8	667.3	670.2	678.3	668.3
20°	655.5	649.3	655.5	663.8	662.5
22.5°	635.5	628.5	641.9	649.3	648.8
25°	612.8	616.1	626.2	634.4	633.1
27.5°	592.9	596.8	611.1	622.4	615.1
30°	577.5	575.5	587.6	597.7	603.3
32.5°	550.0	557.1	571.3	581.2	575.9
35°	533.4	535.0	547.3	560.0	559.6
37.5°	504.2	511.6	529.0	532.5	529.3
40°	479.4	486.7	502.5	506.3	504.7
42.5°	461.0	462.4	475.8	480.2	473.2
45°	429.1	437.1	444.4	455.8	445.0
47.5°	401.9	405.7	421.3	424.4	418.7
50°	377.3	378.6	394.3	390.5	386.8
52.5°	346.3	351.8	360.6	359.9	355.5
55°	320.8	318.6	327.0	324.8	324.7
57.5°	290.1	293.9	300.8	297.2	291.5
60°	261.5	261.6	264.1	260.1	259.3
62.5°	229.5	230.7	231.2	226.3	234.3
65°	197.1	194.5	202.1	194.4	195.7
67.5°	167.2	168.5	167.7	162.9	164.8
70°	136.8	138.5	137.3	131.8	133.5
72.5°	109.1	107.0	108.4	101.5	104.6
75°	82.0	80.3	81.8	76.1	78.7
77.5°	55.9	57.2	56.2	53.2	54.9
80°	36.9	35.8	35.8	34.1	34.4
82.5°	21.5	20.5	20.2	19.6	20.5
85°	10.1	9.8	10.0	9.7	9.3
87.5°	3.6	3.7	3.7	3.5	3.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)