

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: P590095

Luminaire Tested: FSR-24-2-LD4-1STD-40-UNV-93-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590095  
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-93-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

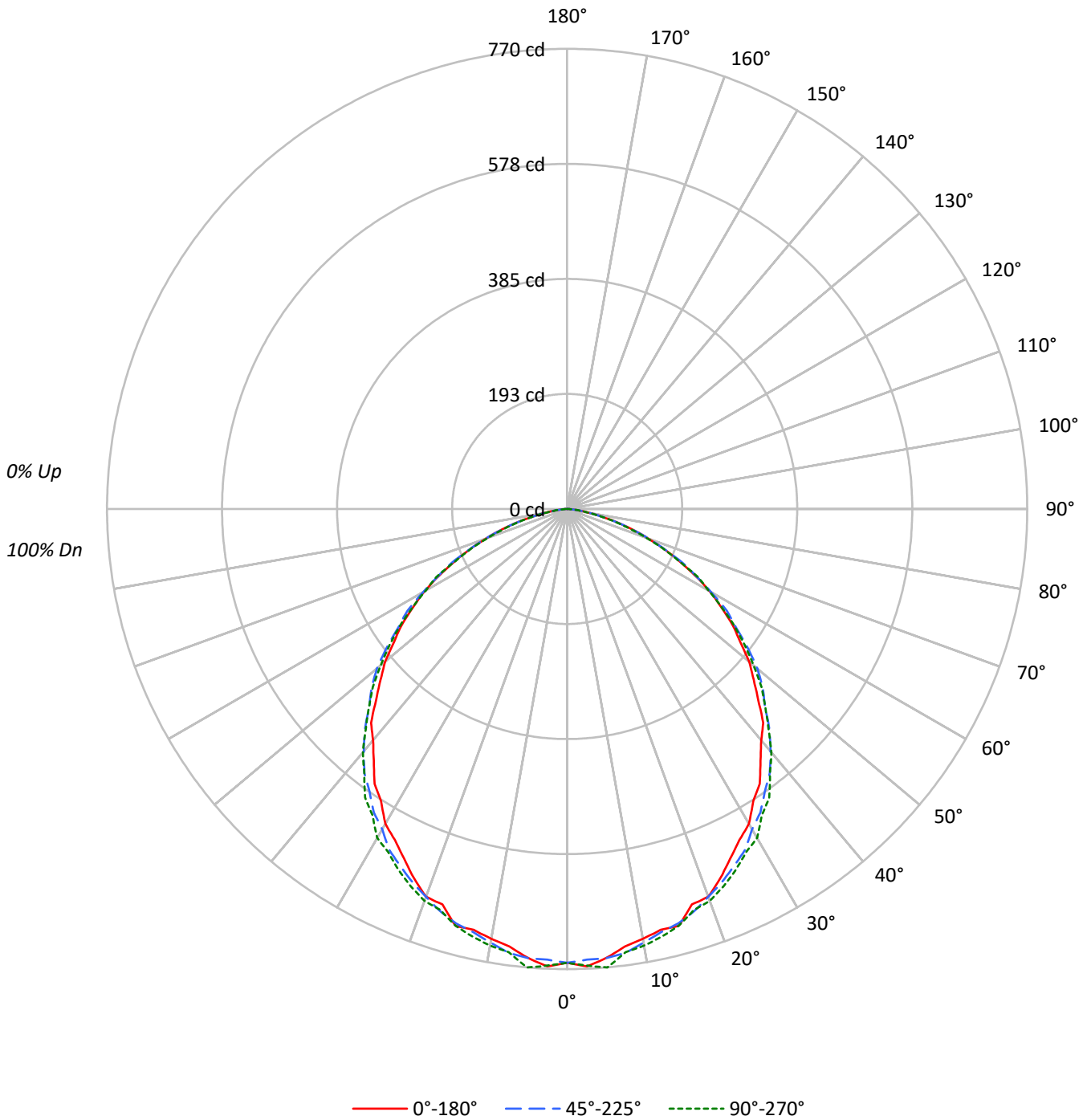
Lumens per Lamp: N/A  
Luminaire Lumens: 1914.0 lumens  
Efficiency: N/A  
Efficacy: 115.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	2044	2044	2044
5°	2037	2038	2081
10°	1996	2013	2027
15°	2011	2000	2012
20°	1977	1977	1998
25°	1917	1958	1980
30°	1890	1923	1975
35°	1846	1894	1937
40°	1774	1859	1867
45°	1720	1781	1784
50°	1664	1739	1706
55°	1585	1616	1605
60°	1482	1497	1470
65°	1322	1356	1312
70°	1134	1138	1106
75°	898	896	862
80°	601	586	563
85°	327	324	303

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1827 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	71.4	3.7
10°-20°	202.5	10.6
20°-30°	303.3	15.8
30°-40°	359.5	18.8
40°-50°	360.2	18.8
50°-60°	305.7	16.0
60°-70°	206.1	10.8
70°-80°	90.6	4.7
80°-90°	14.7	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°	577.2	30.2
0°-40°	936.7	48.9
0°-60°	1602.6	83.7
0°-90°	1914.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1914.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	759	759	759	759	759	
5°	754	752	754	752	770	71
15°	722	714	718	722	722	201
25°	646	649	660	668	667	298
35°	562	564	577	590	590	349
45°	452	460	468	480	469	350
55°	338	336	344	342	342	301
65°	208	205	213	205	206	206
75°	86	85	86	80	83	93
85°	11	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°	759.4	759.4	759.4	759.4	759.4
2.5°	766.0	760.2	754.8	761.1	764.9
5°	754.0	752.3	754.3	752.1	770.2
7.5°	738.5	745.3	749.2	746.8	747.9
10°	730.3	728.0	736.7	742.8	741.9
12.5°	721.5	725.0	725.5	732.1	732.7
15°	722.0	713.6	718.0	721.8	722.1
17.5°	693.9	702.9	706.0	714.5	703.9
20°	690.5	683.9	690.5	699.2	697.8
22.5°	669.4	662.1	676.2	683.9	683.4
25°	645.5	649.0	659.6	668.2	666.9
27.5°	624.5	628.6	643.7	655.6	647.9
30°	608.3	606.3	619.0	629.6	635.5
32.5°	579.4	586.9	601.8	612.2	606.7
35°	561.8	563.5	576.6	589.9	589.5
37.5°	531.2	538.9	557.2	561.0	557.5
40°	505.0	512.7	529.3	533.3	531.6
42.5°	485.7	487.0	501.3	505.9	498.5
45°	452.0	460.5	468.1	480.2	468.8
47.5°	423.4	427.3	443.8	447.0	441.0
50°	397.4	398.8	415.4	411.3	407.4
52.5°	364.8	370.5	379.9	379.1	374.5
55°	337.9	335.6	344.5	342.1	342.0
57.5°	305.6	309.6	316.8	313.1	307.1
60°	275.4	275.5	278.2	274.0	273.2
62.5°	241.8	243.0	243.6	238.4	246.8
65°	207.6	204.8	212.9	204.7	206.1
67.5°	176.1	177.5	176.7	171.6	173.6
70°	144.1	145.9	144.6	138.8	140.6
72.5°	114.9	112.8	114.1	106.9	110.2
75°	86.4	84.6	86.2	80.1	82.9
77.5°	58.8	60.2	59.2	56.0	57.9
80°	38.8	37.8	37.8	35.9	36.3
82.5°	22.7	21.6	21.3	20.7	21.6
85°	10.6	10.3	10.5	10.2	9.8
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)