

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: P590738

Luminaire Tested: FSR-24-2-LD4-4HI-35-UNV-93-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590738  
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-LD4-4HI-35-UNV-93-94-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

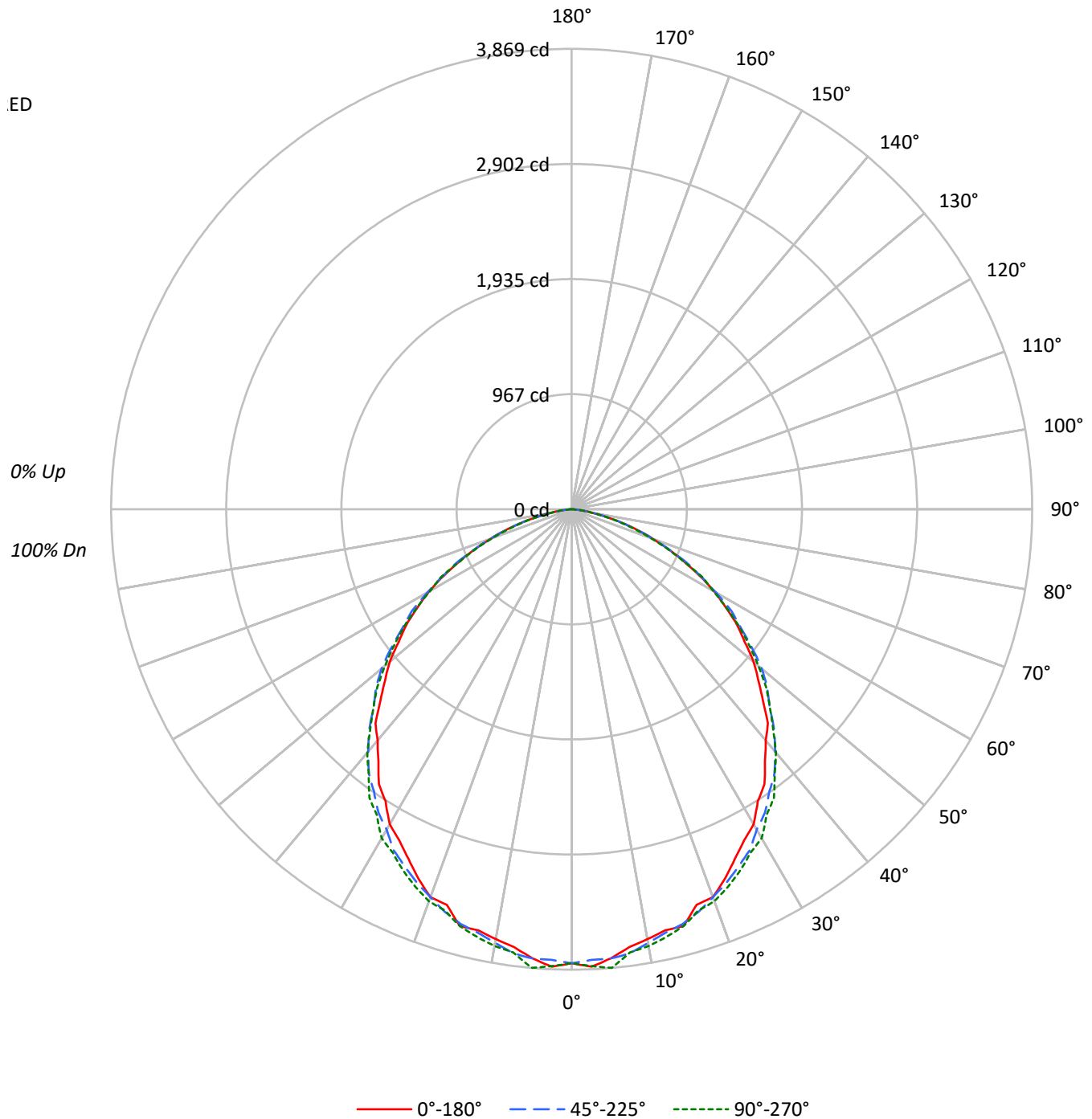
Lumens per Lamp: N/A  
Luminaire Lumens: 9614.0 lumens  
Efficiency: N/A  
Efficacy: 111.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
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°	10265	10265	10265
5°	10231	10235	10451
10°	10024	10111	10182
15°	10103	10048	10104
20°	9932	9932	10038
25°	9627	9837	9946
30°	9495	9661	9918
35°	9271	9514	9727
40°	8910	9339	9381
45°	8641	8948	8961
50°	8357	8734	8567
55°	7963	8117	8060
60°	7446	7520	7385
65°	6639	6809	6592
70°	5696	5716	5557
75°	4511	4501	4327
80°	3022	2938	2824
85°	1643	1627	1522

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 9179 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	358.8	3.7
10°-20°	1016.9	10.6
20°-30°	1523.6	15.8
30°-40°	1805.8	18.8
40°-50°	1809.1	18.8
50°-60°	1535.6	16.0
60°-70°	1035.3	10.8
70°-80°	454.9	4.7
80°-90°	73.9	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°	2899.3	30.2
0°-40°	4705.1	48.9
0°-60°	8049.8	83.7
0°-90°	9614.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9614.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3815	3815	3815	3815	3815	
5°	3788	3779	3789	3778	3869	357
15°	3626	3585	3607	3626	3627	1010
25°	3242	3260	3313	3356	3350	1499
35°	2822	2830	2896	2963	2961	1752
45°	2270	2313	2351	2412	2355	1756
55°	1697	1686	1730	1718	1718	1510
65°	1043	1029	1069	1028	1035	1037
75°	434	425	433	402	416	465
85°	53	52	53	51	49	77
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3814.6	3814.6	3814.6	3814.6	3814.6
2.5°	3847.6	3818.5	3791.4	3823.0	3842.2
5°	3787.5	3778.6	3789.0	3777.7	3868.8
7.5°	3709.7	3743.7	3763.4	3751.1	3756.5
10°	3668.3	3656.5	3700.3	3730.9	3726.4
12.5°	3624.0	3641.7	3644.2	3677.2	3680.1
15°	3626.4	3584.6	3606.7	3625.5	3626.9
17.5°	3485.6	3530.9	3546.2	3589.0	3535.8
20°	3468.3	3435.3	3468.3	3512.2	3505.3
22.5°	3362.5	3325.5	3396.4	3435.3	3432.9
25°	3242.3	3260.0	3313.2	3356.5	3349.7
27.5°	3136.9	3157.6	3233.4	3293.0	3254.6
30°	3055.6	3045.3	3109.3	3162.5	3192.0
32.5°	2910.3	2947.8	3022.6	3075.3	3047.2
35°	2822.2	2830.5	2896.0	2963.0	2961.0
37.5°	2668.0	2706.9	2799.0	2817.7	2800.5
40°	2536.5	2575.4	2658.6	2678.8	2670.5
42.5°	2439.5	2446.4	2517.8	2540.9	2504.0
45°	2270.5	2312.9	2351.3	2411.9	2354.8
47.5°	2126.7	2146.4	2229.2	2245.4	2215.4
50°	1996.2	2003.1	2086.3	2066.1	2046.4
52.5°	1832.2	1861.2	1908.0	1904.1	1880.9
55°	1697.2	1685.9	1730.2	1718.4	1717.9
57.5°	1535.2	1554.9	1591.3	1572.6	1542.6
60°	1383.5	1384.0	1397.3	1376.1	1372.2
62.5°	1214.6	1220.5	1223.4	1197.3	1239.7
65°	1042.7	1028.9	1069.3	1028.4	1035.3
67.5°	884.6	891.5	887.5	861.9	871.8
70°	724.0	732.9	726.5	697.4	706.3
72.5°	577.2	566.4	573.3	536.9	553.6
75°	433.9	425.0	432.9	402.4	416.2
77.5°	295.5	302.4	297.5	281.2	290.6
80°	195.0	189.6	189.6	180.3	182.2
82.5°	113.8	108.4	106.9	103.9	108.4
85°	53.2	51.7	52.7	51.2	49.3
87.5°	19.2	19.7	19.7	18.7	17.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)