

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: P590284

Luminaire Tested: FSR-24-2-LD4-2LO-40-UNV-82-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590284  
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-LD4-2LO-40-UNV-82-97-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

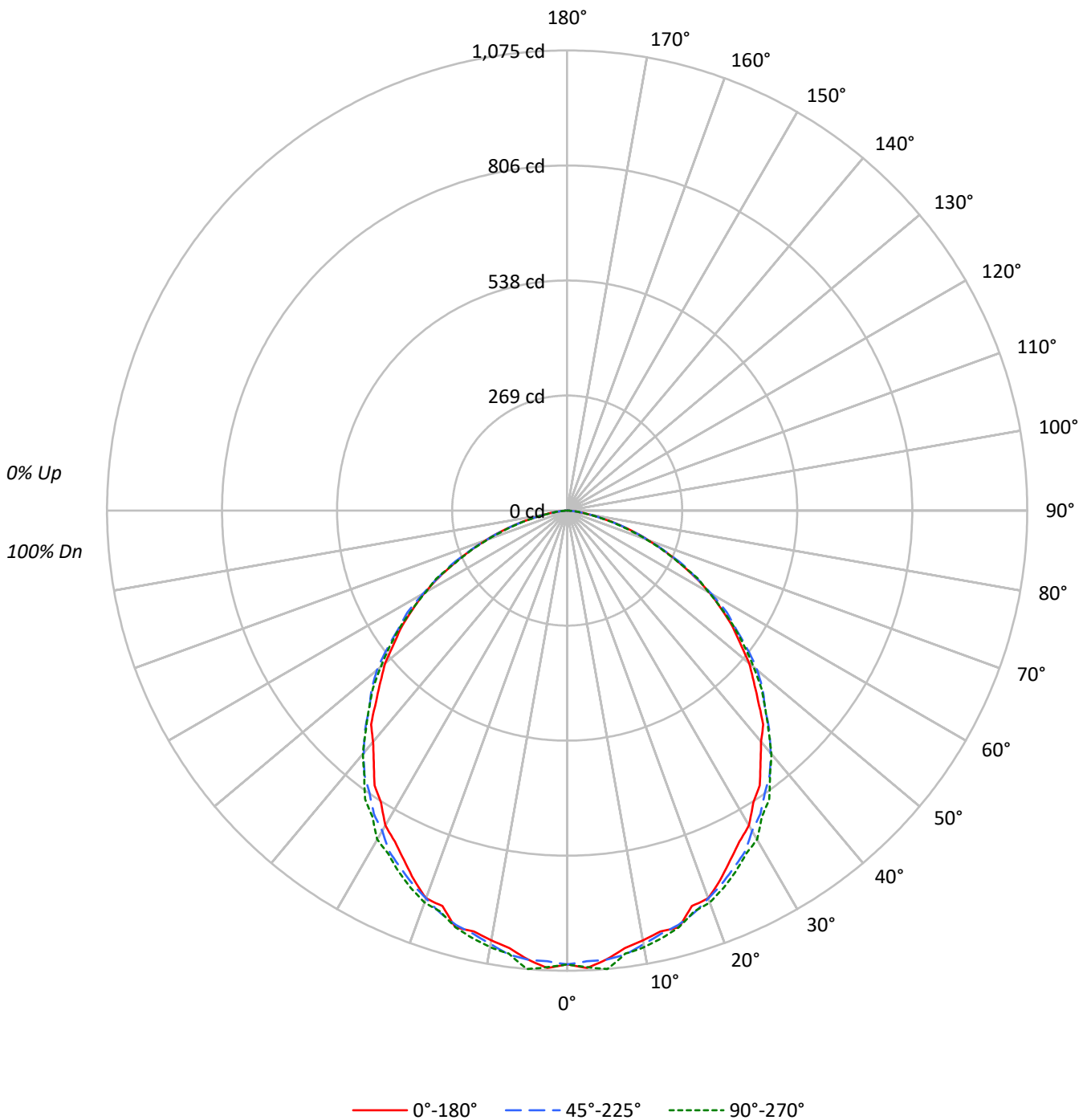
Lumens per Lamp: N/A  
Luminaire Lumens: 2672.0 lumens  
Efficiency: N/A  
Efficacy: 114.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
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				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°	2853	2853	2853
5°	2844	2845	2904
10°	2786	2810	2830
15°	2808	2793	2808
20°	2761	2761	2790
25°	2676	2734	2764
30°	2639	2685	2757
35°	2577	2644	2704
40°	2477	2596	2607
45°	2401	2487	2491
50°	2323	2427	2381
55°	2213	2256	2240
60°	2069	2090	2053
65°	1845	1892	1832
70°	1583	1589	1544
75°	1254	1251	1203
80°	840	817	784
85°	457	451	423

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2551 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.7	3.7
10°-20°	282.6	10.6
20°-30°	423.5	15.8
30°-40°	501.9	18.8
40°-50°	502.8	18.8
50°-60°	426.8	16.0
60°-70°	287.8	10.8
70°-80°	126.4	4.7
80°-90°	20.5	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°	805.8	30.2
0°-40°	1307.7	48.9
0°-60°	2237.3	83.7
0°-90°	2672.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2672.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1060	1060	1060	1060	1060	
5°	1053	1050	1053	1050	1075	99
15°	1008	996	1002	1008	1008	281
25°	901	906	921	933	931	417
35°	784	787	805	824	823	487
45°	631	643	654	670	654	488
55°	472	469	481	478	478	420
65°	290	286	297	286	288	288
75°	121	118	120	112	116	129
85°	15	14	15	14	14	21
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1060.2	1060.2	1060.2	1060.2	1060.2
2.5°	1069.4	1061.3	1053.7	1062.5	1067.8
5°	1052.7	1050.2	1053.1	1049.9	1075.2
7.5°	1031.0	1040.5	1045.9	1042.5	1044.0
10°	1019.5	1016.2	1028.4	1036.9	1035.7
12.5°	1007.2	1012.1	1012.8	1022.0	1022.8
15°	1007.9	996.3	1002.4	1007.6	1008.0
17.5°	968.7	981.3	985.6	997.5	982.7
20°	964.0	954.8	964.0	976.1	974.2
22.5°	934.5	924.3	944.0	954.8	954.1
25°	901.1	906.0	920.8	932.9	931.0
27.5°	871.8	877.6	898.7	915.2	904.5
30°	849.2	846.4	864.2	878.9	887.2
32.5°	808.9	819.3	840.1	854.7	846.9
35°	784.4	786.7	804.9	823.5	823.0
37.5°	741.5	752.3	777.9	783.1	778.3
40°	705.0	715.8	738.9	744.5	742.2
42.5°	678.0	679.9	699.8	706.2	695.9
45°	631.0	642.8	653.5	670.3	654.5
47.5°	591.1	596.5	619.5	624.1	615.7
50°	554.8	556.7	579.8	574.2	568.8
52.5°	509.2	517.3	530.3	529.2	522.8
55°	471.7	468.6	480.9	477.6	477.5
57.5°	426.7	432.1	442.3	437.1	428.7
60°	384.5	384.6	388.3	382.5	381.4
62.5°	337.6	339.2	340.0	332.8	344.5
65°	289.8	286.0	297.2	285.8	287.7
67.5°	245.8	247.8	246.7	239.6	242.3
70°	201.2	203.7	201.9	193.8	196.3
72.5°	160.4	157.4	159.3	149.2	153.9
75°	120.6	118.1	120.3	111.8	115.7
77.5°	82.1	84.0	82.7	78.2	80.8
80°	54.2	52.7	52.7	50.1	50.6
82.5°	31.6	30.1	29.7	28.9	30.1
85°	14.8	14.4	14.6	14.2	13.7
87.5°	5.3	5.5	5.5	5.2	4.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)