

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: P590379

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

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590379  
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-LD4-2STD-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**

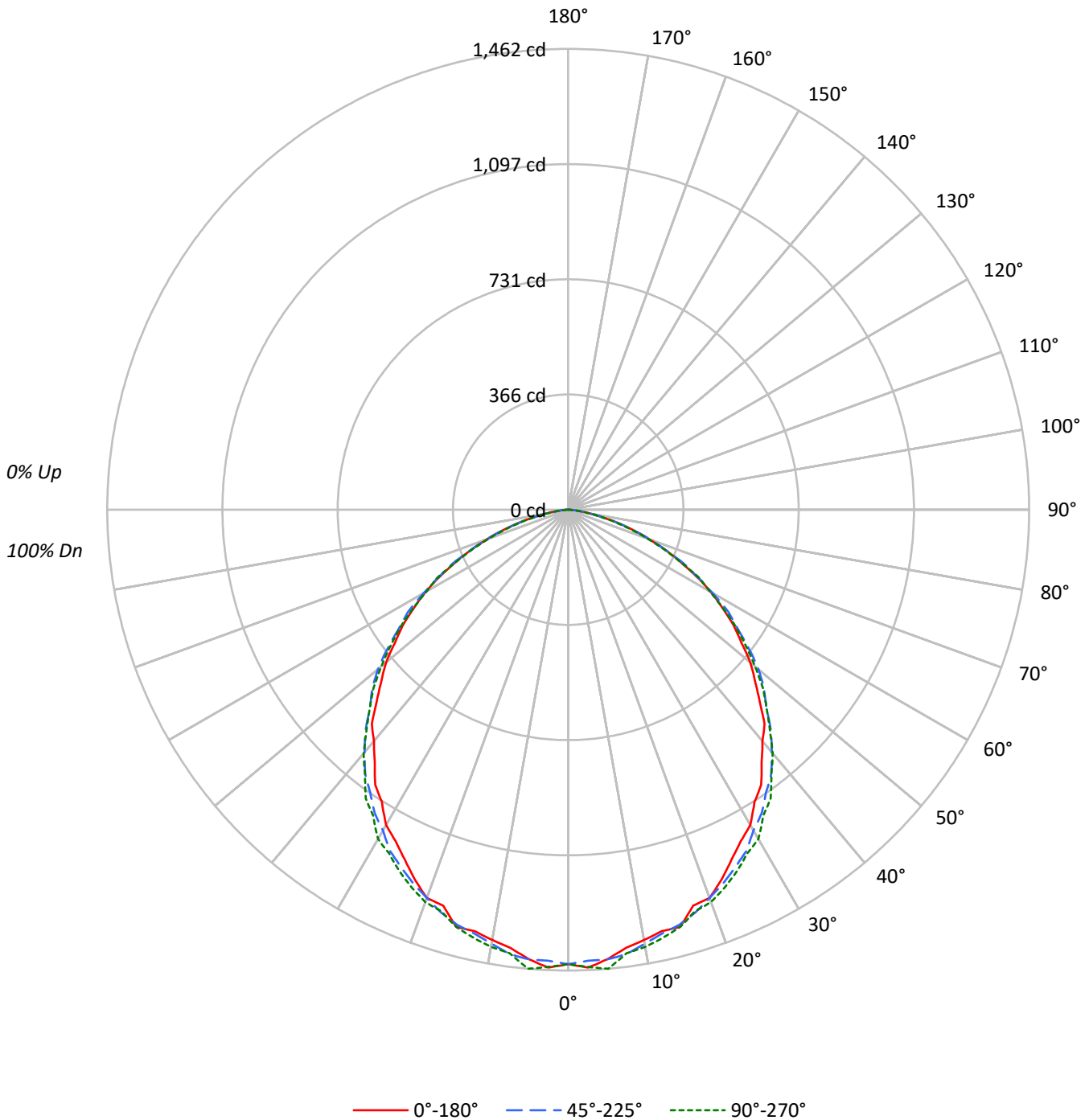
Lumens per Lamp: N/A  
Luminaire Lumens: 3633.0 lumens  
Efficiency: N/A  
Efficacy: 109.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	3879	3879	3879
5°	3866	3868	3949
10°	3788	3821	3848
15°	3818	3797	3818
20°	3753	3753	3793
25°	3638	3717	3758
30°	3588	3651	3748
35°	3504	3595	3676
40°	3367	3529	3545
45°	3265	3381	3386
50°	3158	3301	3237
55°	3009	3067	3046
60°	2814	2842	2791
65°	2509	2573	2491
70°	2153	2160	2100
75°	1705	1701	1635
80°	1142	1111	1068
85°	621	614	574

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3468 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	135.6	3.7
10°-20°	384.3	10.6
20°-30°	575.7	15.8
30°-40°	682.4	18.8
40°-50°	683.6	18.8
50°-60°	580.3	16.0
60°-70°	391.2	10.8
70°-80°	171.9	4.7
80°-90°	27.9	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°	1095.6	30.2
0°-40°	1778.0	48.9
0°-60°	3041.9	83.7
0°-90°	3633.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3633.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1442	1442	1442	1442	1442	
5°	1431	1428	1432	1428	1462	135
15°	1370	1355	1363	1370	1371	382
25°	1225	1232	1252	1268	1266	566
35°	1066	1070	1094	1120	1119	662
45°	858	874	888	911	890	664
55°	641	637	654	649	649	571
65°	394	389	404	389	391	392
75°	164	161	164	152	157	176
85°	20	20	20	19	19	29
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1441.5	1441.5	1441.5	1441.5	1441.5
2.5°	1454.0	1443.0	1432.7	1444.6	1451.9
5°	1431.2	1427.9	1431.8	1427.5	1462.0
7.5°	1401.8	1414.7	1422.1	1417.5	1419.5
10°	1386.2	1381.7	1398.3	1409.8	1408.2
12.5°	1369.5	1376.2	1377.1	1389.6	1390.7
15°	1370.4	1354.6	1362.9	1370.0	1370.6
17.5°	1317.2	1334.3	1340.0	1356.2	1336.1
20°	1310.6	1298.2	1310.6	1327.2	1324.6
22.5°	1270.6	1256.7	1283.5	1298.2	1297.2
25°	1225.2	1231.9	1252.0	1268.4	1265.8
27.5°	1185.4	1193.2	1221.9	1244.4	1229.9
30°	1154.7	1150.8	1175.0	1195.1	1206.2
32.5°	1099.8	1113.9	1142.2	1162.1	1151.5
35°	1066.5	1069.6	1094.4	1119.7	1118.9
37.5°	1008.2	1022.9	1057.7	1064.8	1058.3
40°	958.5	973.2	1004.7	1012.3	1009.1
42.5°	921.8	924.4	951.4	960.2	946.2
45°	858.0	874.0	888.5	911.4	889.8
47.5°	803.7	811.1	842.4	848.5	837.2
50°	754.3	756.9	788.4	780.8	773.3
52.5°	692.4	703.3	721.0	719.5	710.8
55°	641.4	637.1	653.8	649.4	649.2
57.5°	580.1	587.6	601.3	594.3	582.9
60°	522.8	523.0	528.0	520.0	518.5
62.5°	459.0	461.2	462.3	452.5	468.5
65°	394.0	388.8	404.1	388.6	391.2
67.5°	334.3	336.9	335.4	325.7	329.4
70°	273.6	276.9	274.5	263.5	266.9
72.5°	218.1	214.0	216.6	202.9	209.2
75°	164.0	160.6	163.6	152.1	157.3
77.5°	111.7	114.3	112.4	106.3	109.8
80°	73.7	71.7	71.7	68.1	68.9
82.5°	43.0	40.9	40.4	39.3	40.9
85°	20.1	19.5	19.9	19.4	18.6
87.5°	7.3	7.4	7.4	7.1	6.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)