

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: P590540

Luminaire Tested: FSR-24-2-LD4-3LO-35-UNV-82-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590540  
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-LD4-3LO-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

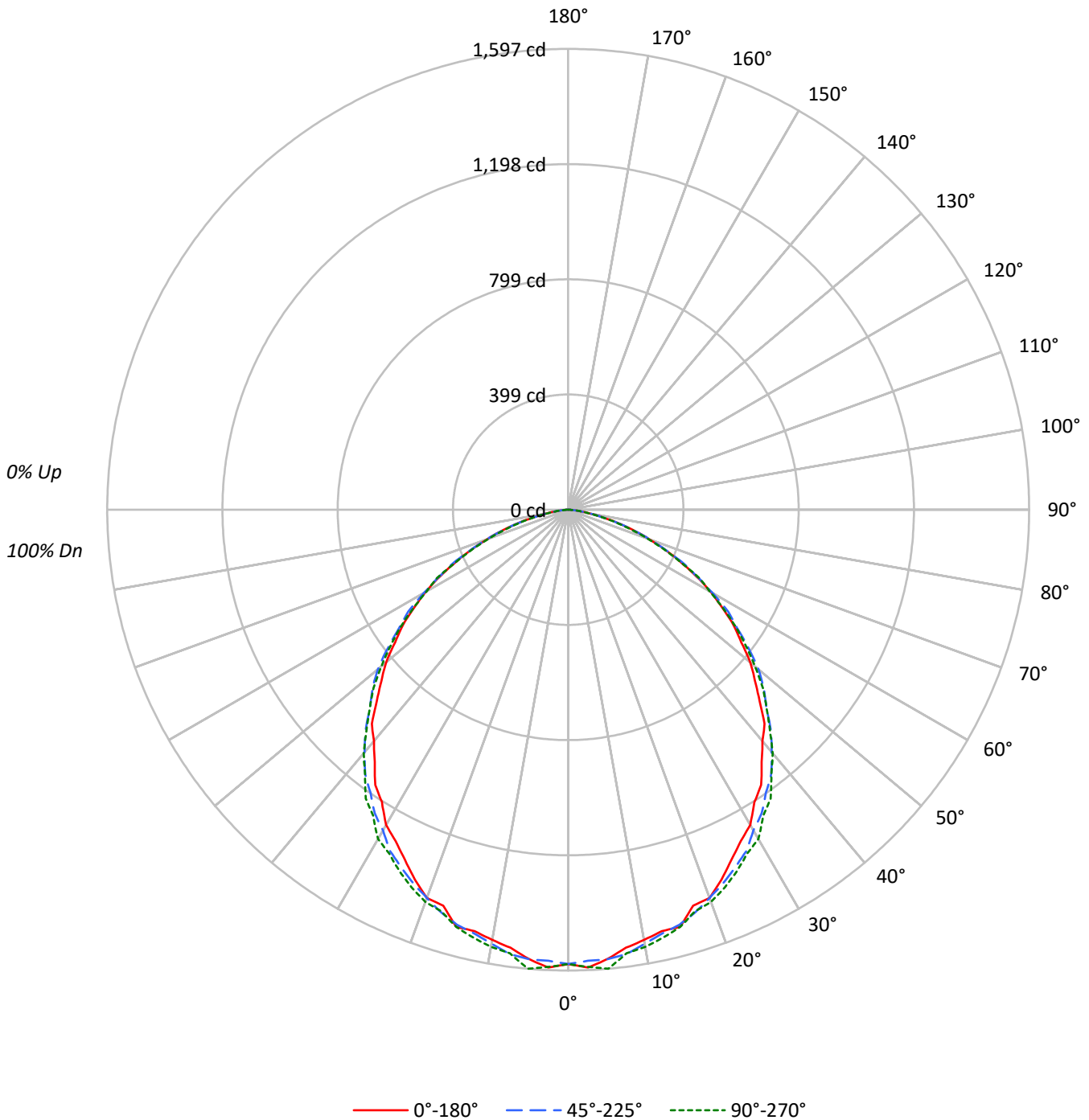
Lumens per Lamp: N/A  
Luminaire Lumens: 3968.0 lumens  
Efficiency: N/A  
Efficacy: 113.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
Input Voltage (V):  
Input Current (Ain): NR  
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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4237	4237	4237
5°	4223	4224	4313
10°	4137	4173	4203
15°	4170	4147	4171
20°	4099	4099	4143
25°	3973	4060	4105
30°	3919	3988	4094
35°	3826	3927	4015
40°	3678	3855	3872
45°	3566	3693	3699
50°	3449	3605	3536
55°	3286	3350	3326
60°	3073	3104	3048
65°	2740	2810	2721
70°	2351	2359	2293
75°	1862	1858	1786
80°	1247	1213	1165
85°	679	673	627

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3788 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.1	3.7
10°-20°	419.7	10.6
20°-30°	628.8	15.8
30°-40°	745.3	18.8
40°-50°	746.7	18.8
50°-60°	633.8	16.0
60°-70°	427.3	10.8
70°-80°	187.8	4.7
80°-90°	30.5	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°	1196.7	30.2
0°-40°	1941.9	48.9
0°-60°	3322.4	83.7
0°-90°	3968.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3968.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1574	1574	1574	1574	1574	
5°	1563	1560	1564	1559	1597	147
15°	1497	1480	1489	1496	1497	417
25°	1338	1346	1368	1385	1382	619
35°	1165	1168	1195	1223	1222	723
45°	937	955	970	996	972	725
55°	700	696	714	709	709	623
65°	430	425	441	424	427	428
75°	179	175	179	166	172	192
85°	22	21	22	21	20	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1574.4	1574.4	1574.4	1574.4	1574.4
2.5°	1588.0	1576.0	1564.8	1577.9	1585.8
5°	1563.2	1559.6	1563.8	1559.2	1596.8
7.5°	1531.1	1545.1	1553.3	1548.2	1550.4
10°	1514.0	1509.1	1527.2	1539.8	1538.0
12.5°	1495.7	1503.1	1504.1	1517.7	1518.9
15°	1496.7	1479.5	1488.6	1496.3	1497.0
17.5°	1438.6	1457.3	1463.6	1481.3	1459.3
20°	1431.5	1417.9	1431.5	1449.6	1446.7
22.5°	1387.8	1372.5	1401.8	1417.9	1416.9
25°	1338.2	1345.5	1367.5	1385.4	1382.5
27.5°	1294.7	1303.2	1334.5	1359.1	1343.3
30°	1261.1	1256.9	1283.3	1305.3	1317.5
32.5°	1201.2	1216.6	1247.5	1269.3	1257.7
35°	1164.8	1168.2	1195.3	1222.9	1222.1
37.5°	1101.2	1117.2	1155.2	1163.0	1155.8
40°	1046.9	1063.0	1097.3	1105.6	1102.2
42.5°	1006.8	1009.7	1039.2	1048.7	1033.5
45°	937.1	954.6	970.5	995.5	971.9
47.5°	877.8	885.9	920.0	926.8	914.4
50°	823.9	826.7	861.1	852.8	844.6
52.5°	756.2	768.2	787.5	785.9	776.3
55°	700.5	695.8	714.1	709.2	709.0
57.5°	633.6	641.8	656.8	649.1	636.7
60°	571.0	571.2	576.7	568.0	566.3
62.5°	501.3	503.7	504.9	494.2	511.7
65°	430.3	424.7	441.3	424.4	427.3
67.5°	365.1	367.9	366.3	355.7	359.8
70°	298.8	302.5	299.8	287.8	291.5
72.5°	238.2	233.8	236.6	221.6	228.5
75°	179.1	175.4	178.7	166.1	171.8
77.5°	122.0	124.8	122.8	116.1	119.9
80°	80.5	78.3	78.3	74.4	75.2
82.5°	47.0	44.7	44.1	42.9	44.7
85°	22.0	21.3	21.8	21.1	20.3
87.5°	7.9	8.1	8.1	7.7	7.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)