

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: P590545

Luminaire Tested: FSR-24-2-LD4-3LO-35-UNV-93-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590545  
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-93-88-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

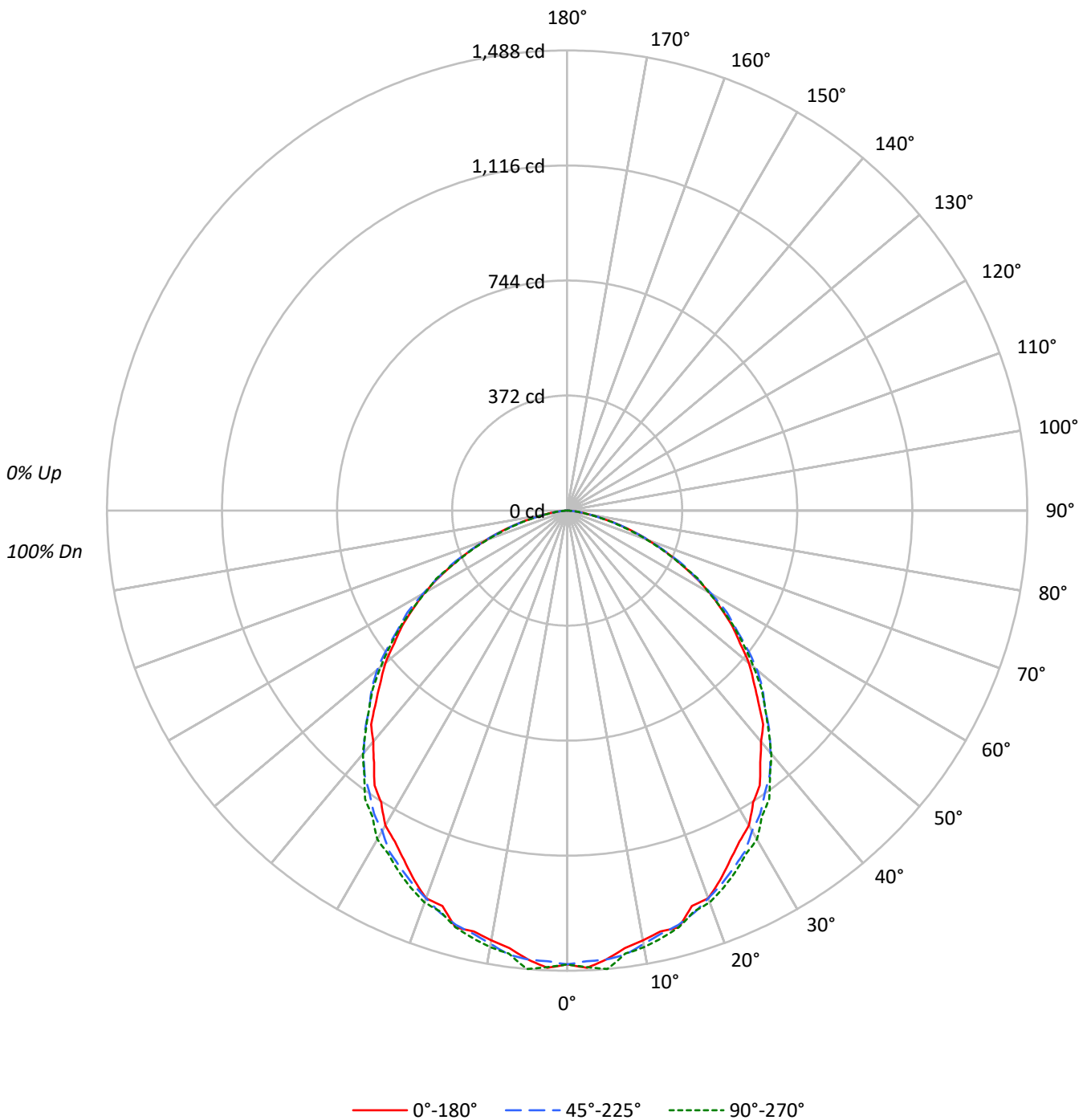
Lumens per Lamp: N/A  
Luminaire Lumens: 3698.0 lumens  
Efficiency: N/A  
Efficacy: 105.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
Input Voltage (V):  
Input Current (Ain): NR  
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																		
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°	3948	3948	3948
5°	3935	3937	4020
10°	3856	3889	3917
15°	3886	3865	3887
20°	3820	3820	3861
25°	3703	3784	3825
30°	3652	3716	3815
35°	3566	3660	3742
40°	3427	3592	3608
45°	3324	3442	3447
50°	3214	3360	3296
55°	3063	3122	3100
60°	2864	2893	2841
65°	2554	2619	2535
70°	2191	2198	2138
75°	1735	1731	1665
80°	1162	1130	1086
85°	633	627	584

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3530 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.0	3.7
10°-20°	391.2	10.6
20°-30°	586.0	15.8
30°-40°	694.6	18.8
40°-50°	695.9	18.8
50°-60°	590.7	16.0
60°-70°	398.2	10.8
70°-80°	175.0	4.7
80°-90°	28.4	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°	1115.2	30.2
0°-40°	1809.8	48.9
0°-60°	3096.3	83.7
0°-90°	3698.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3698.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1467	1467	1467	1467	1467	
5°	1457	1453	1457	1453	1488	137
15°	1395	1379	1387	1394	1395	389
25°	1247	1254	1274	1291	1288	577
35°	1086	1089	1114	1140	1139	674
45°	873	890	904	928	906	676
55°	653	648	666	661	661	581
65°	401	396	411	396	398	399
75°	167	164	166	155	160	179
85°	20	20	20	20	19	30
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1467.3	1467.3	1467.3	1467.3	1467.3
2.5°	1480.0	1468.8	1458.4	1470.5	1477.9
5°	1456.9	1453.4	1457.4	1453.1	1488.1
7.5°	1426.9	1440.0	1447.6	1442.8	1444.9
10°	1411.0	1406.5	1423.3	1435.1	1433.4
12.5°	1394.0	1400.8	1401.7	1414.4	1415.6
15°	1394.9	1378.8	1387.3	1394.5	1395.1
17.5°	1340.7	1358.2	1364.0	1380.5	1360.0
20°	1334.1	1321.4	1334.1	1351.0	1348.3
22.5°	1293.4	1279.2	1306.4	1321.4	1320.5
25°	1247.1	1254.0	1274.4	1291.1	1288.4
27.5°	1206.6	1214.5	1243.7	1266.6	1251.9
30°	1175.3	1171.4	1196.0	1216.4	1227.8
32.5°	1119.4	1133.8	1162.6	1182.9	1172.1
35°	1085.5	1088.8	1114.0	1139.7	1139.0
37.5°	1026.2	1041.2	1076.6	1083.8	1077.2
40°	975.7	990.6	1022.6	1030.4	1027.2
42.5°	938.3	941.0	968.5	977.4	963.2
45°	873.4	889.6	904.4	927.7	905.7
47.5°	818.0	825.6	857.4	863.7	852.1
50°	767.8	770.5	802.5	794.7	787.2
52.5°	704.7	715.9	733.9	732.4	723.5
55°	652.8	648.5	665.5	661.0	660.8
57.5°	590.5	598.1	612.1	604.9	593.4
60°	532.2	532.3	537.5	529.3	527.8
62.5°	467.2	469.5	470.6	460.5	476.8
65°	401.1	395.8	411.3	395.6	398.2
67.5°	340.2	342.9	341.4	331.5	335.3
70°	278.5	281.9	279.4	268.3	271.7
72.5°	222.0	217.9	220.5	206.5	212.9
75°	166.9	163.5	166.5	154.8	160.1
77.5°	113.7	116.3	114.4	108.2	111.8
80°	75.0	72.9	72.9	69.3	70.1
82.5°	43.8	41.7	41.1	40.0	41.7
85°	20.5	19.9	20.3	19.7	18.9
87.5°	7.4	7.6	7.6	7.2	6.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)