

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: P590577

Luminaire Tested: FSR-24-2-LD4-3LO-40-UNV-93-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590577  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

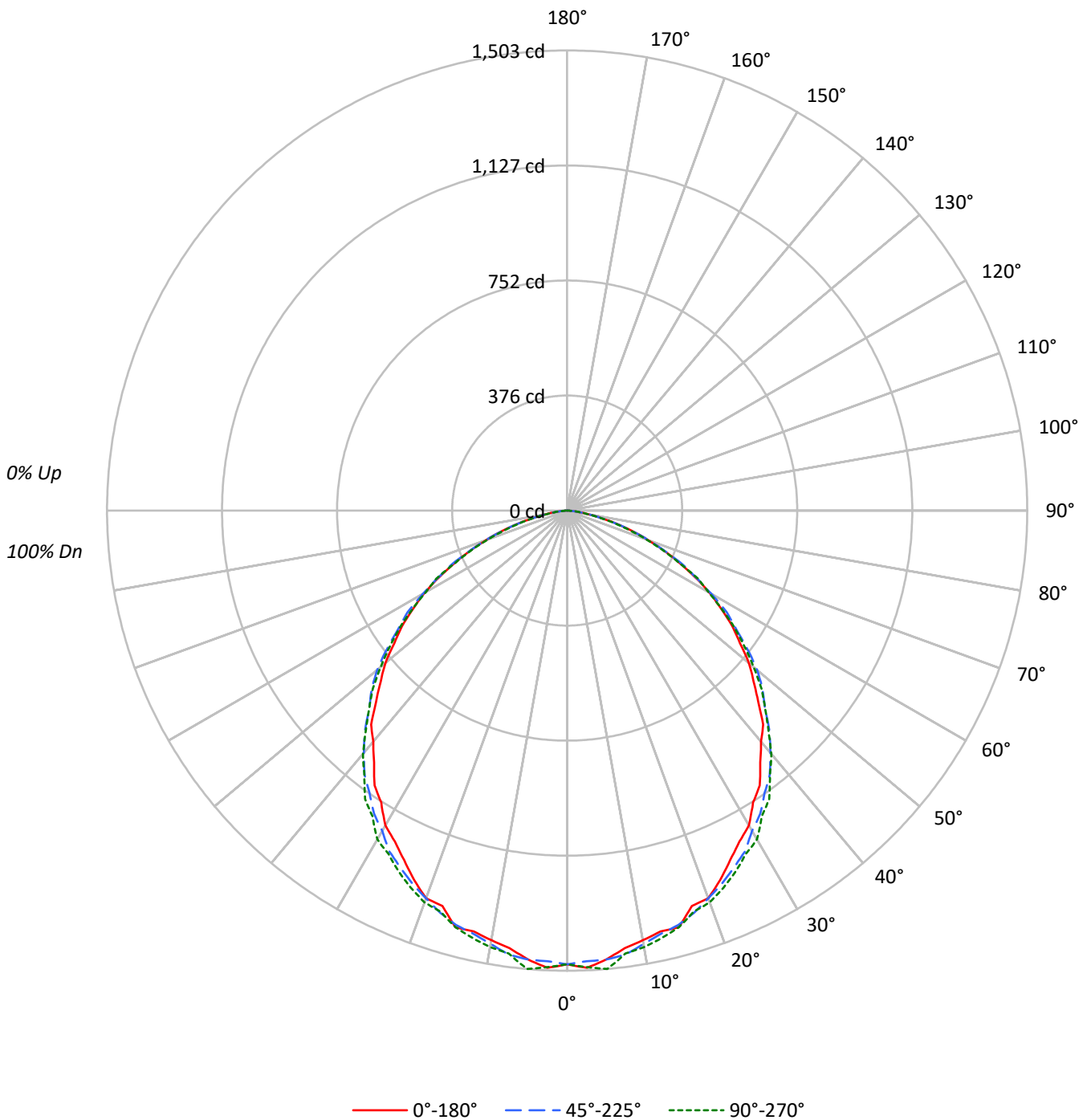
Lumens per Lamp: N/A  
Luminaire Lumens: 3735.0 lumens  
Efficiency: N/A  
Efficacy: 106.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 35.1  
Input Voltage (V):  
Input Current (Ain): NR  
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					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				
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°	3988	3988	3988
5°	3975	3976	4060
10°	3894	3928	3956
15°	3925	3904	3926
20°	3859	3859	3900
25°	3740	3822	3864
30°	3689	3754	3853
35°	3602	3696	3779
40°	3462	3628	3645
45°	3357	3476	3481
50°	3247	3393	3328
55°	3094	3154	3131
60°	2893	2921	2869
65°	2579	2645	2561
70°	2213	2220	2159
75°	1753	1749	1681
80°	1175	1142	1097
85°	639	633	590

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3566 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	139.4	3.7
10°-20°	395.1	10.6
20°-30°	591.9	15.8
30°-40°	701.5	18.8
40°-50°	702.8	18.8
50°-60°	596.6	16.0
60°-70°	402.2	10.8
70°-80°	176.7	4.7
80°-90°	28.7	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°	1126.4	30.2
0°-40°	1827.9	48.9
0°-60°	3127.3	83.7
0°-90°	3735.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3735.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1482	1482	1482	1482	1482	
5°	1471	1468	1472	1468	1503	139
15°	1409	1393	1401	1408	1409	393
25°	1260	1266	1287	1304	1301	582
35°	1096	1100	1125	1151	1150	681
45°	882	898	914	937	915	682
55°	659	655	672	668	667	587
65°	405	400	415	400	402	403
75°	169	165	168	156	162	181
85°	21	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°	1482.0	1482.0	1482.0	1482.0	1482.0
2.5°	1494.8	1483.5	1473.0	1485.2	1492.7
5°	1471.4	1468.0	1472.0	1467.6	1503.0
7.5°	1441.2	1454.4	1462.1	1457.3	1459.4
10°	1425.1	1420.5	1437.6	1449.4	1447.7
12.5°	1407.9	1414.8	1415.7	1428.6	1429.7
15°	1408.9	1392.6	1401.2	1408.5	1409.1
17.5°	1354.1	1371.7	1377.7	1394.3	1373.7
20°	1347.4	1334.6	1347.4	1364.5	1361.8
22.5°	1306.3	1291.9	1319.5	1334.6	1333.7
25°	1259.6	1266.5	1287.2	1304.0	1301.3
27.5°	1218.7	1226.7	1256.2	1279.3	1264.4
30°	1187.1	1183.1	1208.0	1228.6	1240.1
32.5°	1130.6	1145.2	1174.3	1194.7	1183.8
35°	1096.4	1099.6	1125.1	1151.1	1150.4
37.5°	1036.5	1051.6	1087.4	1094.7	1088.0
40°	985.4	1000.5	1032.9	1040.7	1037.5
42.5°	947.7	950.4	978.1	987.1	972.8
45°	882.1	898.5	913.5	937.0	914.8
47.5°	826.2	833.9	866.0	872.3	860.7
50°	775.5	778.2	810.5	802.7	795.0
52.5°	711.8	723.1	741.3	739.7	730.7
55°	659.4	655.0	672.2	667.6	667.4
57.5°	596.4	604.1	618.2	611.0	599.3
60°	537.5	537.7	542.8	534.6	533.1
62.5°	471.9	474.1	475.3	465.2	481.6
65°	405.1	399.7	415.4	399.5	402.2
67.5°	343.7	346.3	344.8	334.9	338.7
70°	281.3	284.7	282.2	270.9	274.4
72.5°	224.3	220.0	222.7	208.6	215.1
75°	168.6	165.1	168.2	156.3	161.7
77.5°	114.8	117.5	115.6	109.3	112.9
80°	75.8	73.7	73.7	70.0	70.8
82.5°	44.2	42.1	41.5	40.4	42.1
85°	20.7	20.1	20.5	19.9	19.1
87.5°	7.5	7.7	7.7	7.3	6.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)