

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: P590334

Luminaire Tested: FSR-24-2-LD4-2STD-35-UNV-81-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590334  
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-35-UNV-81-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

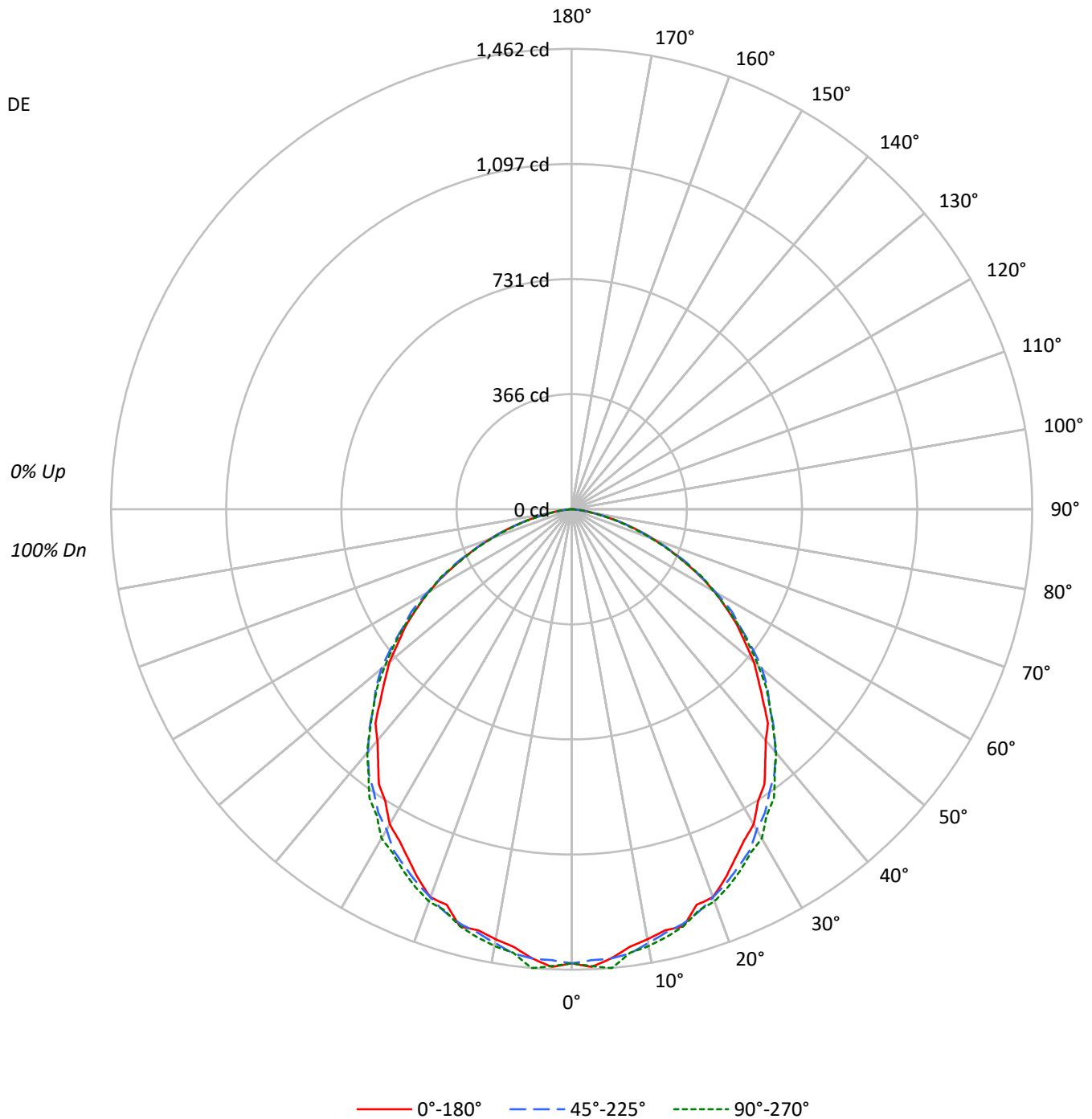
Lumens per Lamp: N/A  
Luminaire Lumens: 3634.0 lumens  
Efficiency: N/A  
Efficacy: 109.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	3880	3880	3880
5°	3867	3869	3950
10°	3789	3822	3849
15°	3819	3798	3819
20°	3754	3754	3794
25°	3639	3719	3759
30°	3589	3652	3749
35°	3504	3596	3677
40°	3368	3530	3546
45°	3266	3382	3387
50°	3159	3301	3238
55°	3010	3068	3047
60°	2814	2843	2792
65°	2509	2574	2492
70°	2153	2161	2101
75°	1705	1701	1635
80°	1142	1111	1068
85°	621	614	574

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 3470 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	135.6	3.7
10°-20°	384.4	10.6
20°-30°	575.9	15.8
30°-40°	682.6	18.8
40°-50°	683.8	18.8
50°-60°	580.4	16.0
60°-70°	391.3	10.8
70°-80°	172.0	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°	1095.9	30.2
0°-40°	1778.5	48.9
0°-60°	3042.7	83.7
0°-90°	3634.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3634.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1442	1442	1442	1442	1442	
5°	1432	1428	1432	1428	1462	135
15°	1371	1355	1363	1370	1371	382
25°	1226	1232	1252	1269	1266	567
35°	1067	1070	1095	1120	1119	662
45°	858	874	889	912	890	664
55°	642	637	654	650	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°	1441.9	1441.9	1441.9	1441.9	1441.9
2.5°	1454.4	1443.4	1433.1	1445.0	1452.3
5°	1431.6	1428.3	1432.2	1427.9	1462.4
7.5°	1402.2	1415.1	1422.5	1417.9	1419.9
10°	1386.6	1382.1	1398.7	1410.2	1408.6
12.5°	1369.8	1376.5	1377.5	1389.9	1391.1
15°	1370.8	1354.9	1363.3	1370.4	1370.9
17.5°	1317.5	1334.6	1340.4	1356.6	1336.5
20°	1311.0	1298.5	1311.0	1327.6	1325.0
22.5°	1271.0	1257.0	1283.8	1298.5	1297.6
25°	1225.6	1232.3	1252.4	1268.7	1266.1
27.5°	1185.7	1193.5	1222.2	1244.7	1230.2
30°	1155.0	1151.1	1175.3	1195.4	1206.6
32.5°	1100.1	1114.2	1142.5	1162.4	1151.8
35°	1066.7	1069.9	1094.7	1120.0	1119.2
37.5°	1008.5	1023.2	1058.0	1065.1	1058.6
40°	958.8	973.5	1004.9	1012.6	1009.4
42.5°	922.1	924.7	951.7	960.4	946.5
45°	858.2	874.2	888.8	911.7	890.1
47.5°	803.9	811.3	842.6	848.7	837.4
50°	754.5	757.1	788.6	781.0	773.5
52.5°	692.5	703.5	721.2	719.7	711.0
55°	641.5	637.3	654.0	649.5	649.4
57.5°	580.3	587.7	601.5	594.4	583.1
60°	522.9	523.1	528.2	520.2	518.7
62.5°	459.1	461.3	462.4	452.6	468.6
65°	394.1	388.9	404.2	388.7	391.3
67.5°	334.4	337.0	335.5	325.8	329.5
70°	273.7	277.0	274.6	263.6	267.0
72.5°	218.2	214.1	216.7	202.9	209.3
75°	164.0	160.7	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	41.0	40.4	39.3	41.0
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)