

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: P562312

Luminaire Tested: FSR-24-4-LD4-1STD-35-UNV-81-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562312  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-1STD-35-UNV-81-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

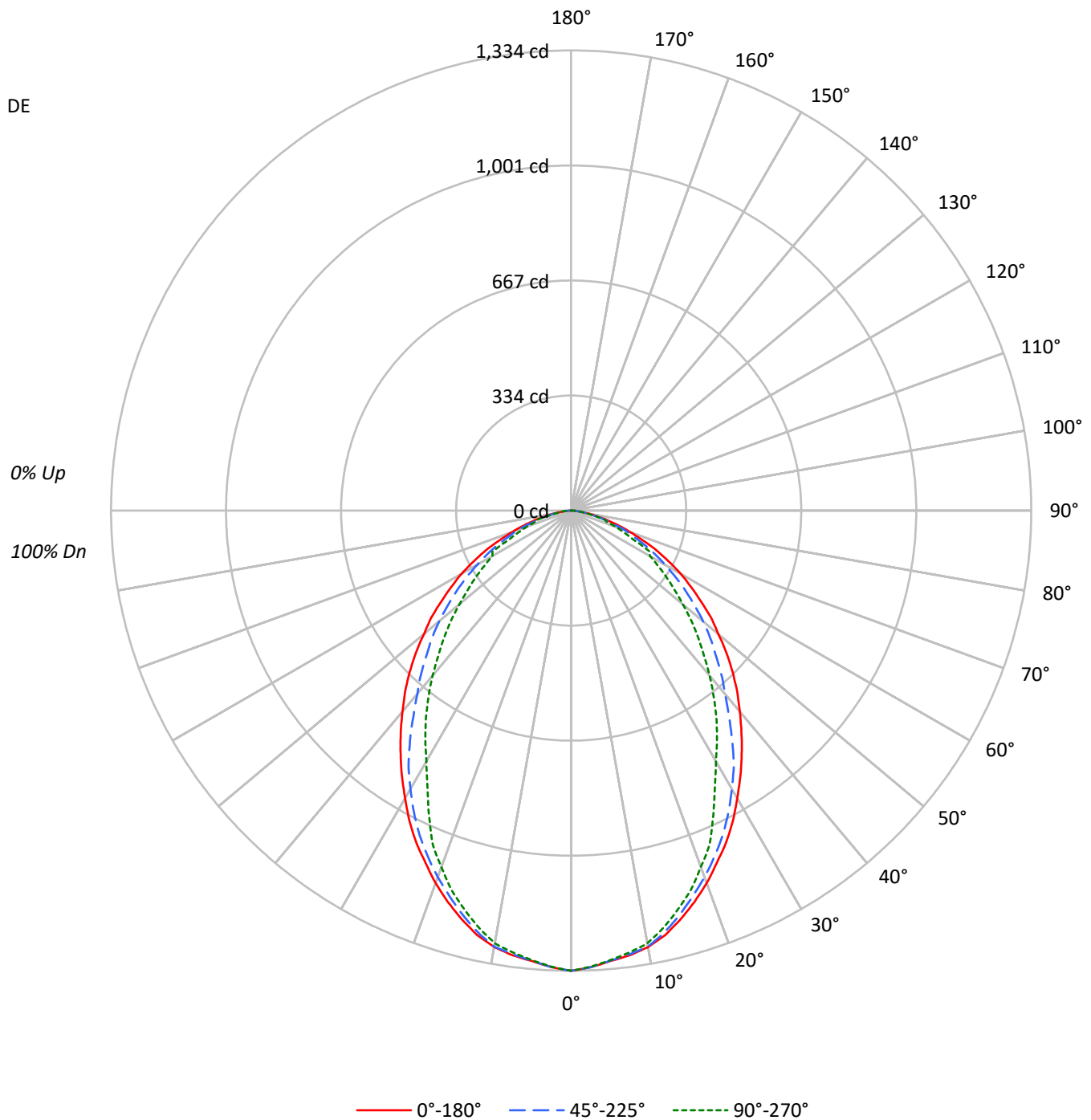
Lumens per Lamp: N/A  
Luminaire Lumens: 2619.0 lumens  
Efficiency: N/A  
Efficacy: 78.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	1795	1795	1795
5°	1771	1769	1766
10°	1755	1753	1740
15°	1708	1691	1667
20°	1645	1619	1575
25°	1578	1543	1447
30°	1495	1447	1304
35°	1416	1338	1206
40°	1336	1219	1097
45°	1259	1127	992
50°	1165	1046	885
55°	1078	948	792
60°	988	847	710
65°	869	741	628
70°	716	649	534
75°	569	497	521
80°	383	359	335
85°	238	286	333

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1259 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	124.2	4.7
10°-20°	340.8	13.0
20°-30°	471.8	18.0
30°-40°	503.1	19.2
40°-50°	459.0	17.5
50°-60°	359.6	13.7
60°-70°	234.3	8.9
70°-80°	103.8	4.0
80°-90°	22.3	0.9
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°	936.8	35.8
0°-40°	1439.9	55.0
0°-60°	2258.5	86.2
0°-90°	2619.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2619.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1334	1334	1334	1334	1334	
5°	1311	1309	1309	1308	1308	124
15°	1226	1226	1214	1201	1197	345
25°	1063	1056	1040	1002	975	488
35°	862	856	814	753	734	539
45°	662	648	592	543	521	510
55°	460	446	404	356	338	412
65°	273	258	233	238	197	269
75°	110	102	96	91	100	117
85°	15	17	18	20	22	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1334.1	1334.1	1334.1	1334.1	1334.1
2.5°	1324.8	1324.8	1324.8	1323.3	1323.3
5°	1310.9	1309.4	1309.4	1307.9	1307.9
7.5°	1300.2	1298.6	1297.1	1295.5	1292.4
10°	1284.7	1284.7	1283.2	1275.5	1273.9
12.5°	1260.1	1258.5	1252.3	1241.5	1238.5
15°	1226.1	1226.1	1213.8	1201.4	1196.8
17.5°	1189.1	1187.6	1172.1	1159.8	1153.6
20°	1149.0	1145.9	1130.5	1110.5	1099.7
22.5°	1104.3	1104.3	1085.8	1059.6	1048.8
25°	1062.6	1056.5	1039.5	1002.5	974.7
27.5°	1014.8	1005.6	987.1	934.6	902.2
30°	962.4	957.8	931.5	863.7	839.0
32.5°	913.0	905.3	877.6	806.6	786.6
35°	862.1	856.0	814.3	752.6	734.1
37.5°	811.2	803.5	751.1	701.7	678.6
40°	760.4	751.1	694.0	649.3	624.6
42.5°	712.5	700.2	644.7	596.9	569.1
45°	661.6	647.8	592.2	542.9	521.3
47.5°	610.7	598.4	547.5	496.6	471.9
50°	556.8	546.0	499.7	448.8	422.6
52.5°	512.0	495.1	450.3	399.5	377.9
55°	459.6	445.7	404.1	356.3	337.8
57.5°	411.8	397.9	359.4	314.6	299.2
60°	367.1	347.0	314.6	276.1	263.7
62.5°	317.7	302.3	274.5	242.1	257.6
65°	273.0	257.6	232.9	237.5	197.4
67.5°	223.6	215.9	194.3	172.7	166.6
70°	182.0	172.7	165.0	141.9	135.7
72.5°	145.0	135.7	124.9	112.6	108.0
75°	109.5	101.8	95.6	91.0	100.2
77.5°	75.6	72.5	67.9	63.2	61.7
80°	49.4	47.8	46.3	44.7	43.2
82.5°	29.3	29.3	29.3	29.3	29.3
85°	15.4	17.0	18.5	20.0	21.6
87.5°	9.3	9.3	10.8	12.3	13.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)