

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: P562247

Luminaire Tested: FSR-24-4-LD4-1LO-50-UNV-81-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562247  
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-LD4-1LO-50-UNV-81-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

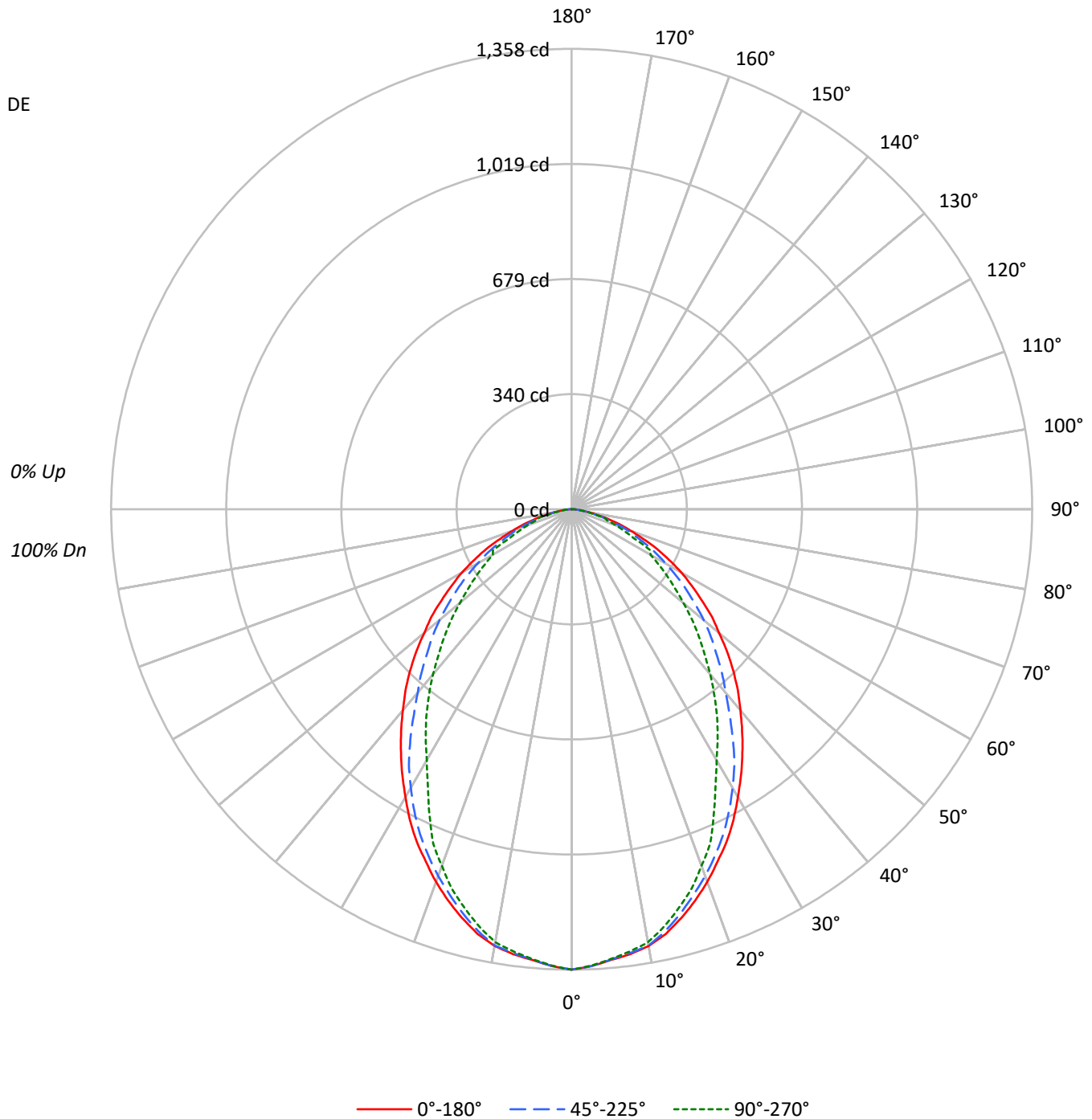
Lumens per Lamp: N/A  
Luminaire Lumens: 2666.0 lumens  
Efficiency: N/A  
Efficacy: 113.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	1827	1827	1827
5°	1802	1800	1798
10°	1787	1785	1772
15°	1739	1721	1697
20°	1675	1648	1603
25°	1606	1571	1473
30°	1522	1473	1327
35°	1441	1362	1227
40°	1359	1241	1117
45°	1282	1147	1010
50°	1186	1065	900
55°	1098	965	806
60°	1006	862	723
65°	885	755	640
70°	729	661	544
75°	580	506	530
80°	389	365	341
85°	242	290	340

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1282 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.4	4.7
10°-20°	346.9	13.0
20°-30°	480.3	18.0
30°-40°	512.1	19.2
40°-50°	467.2	17.5
50°-60°	366.0	13.7
60°-70°	238.6	8.9
70°-80°	105.7	4.0
80°-90°	22.7	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°	953.7	35.8
0°-40°	1465.8	55.0
0°-60°	2299.1	86.2
0°-90°	2666.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2666.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1358	1358	1358	1358	1358	
5°	1334	1333	1333	1331	1331	127
15°	1248	1248	1236	1223	1218	351
25°	1082	1075	1058	1020	992	497
35°	878	871	829	766	747	549
45°	674	659	603	553	531	519
55°	468	454	411	363	344	420
65°	278	262	237	242	201	274
75°	112	104	97	93	102	119
85°	16	17	19	20	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1358.0	1358.0	1358.0	1358.0	1358.0
2.5°	1348.6	1348.6	1348.6	1347.0	1347.0
5°	1334.5	1332.9	1332.9	1331.3	1331.3
7.5°	1323.5	1321.9	1320.3	1318.8	1315.6
10°	1307.8	1307.8	1306.2	1298.4	1296.8
12.5°	1282.7	1281.1	1274.8	1263.8	1260.7
15°	1248.1	1248.1	1235.6	1223.0	1218.3
17.5°	1210.4	1208.9	1193.2	1180.6	1174.3
20°	1169.6	1166.5	1150.8	1130.4	1119.4
22.5°	1124.1	1124.1	1105.3	1078.6	1067.6
25°	1081.7	1075.4	1058.2	1020.5	992.2
27.5°	1033.0	1023.6	1004.8	951.4	918.4
30°	979.7	975.0	948.3	879.2	854.1
32.5°	929.4	921.6	893.3	821.1	800.7
35°	877.6	871.3	828.9	766.1	747.3
37.5°	825.8	818.0	764.6	714.3	690.8
40°	774.0	764.6	706.5	661.0	635.8
42.5°	725.3	712.8	656.2	607.6	579.3
45°	673.5	659.4	602.9	552.6	530.7
47.5°	621.7	609.1	557.3	505.5	480.4
50°	566.8	555.8	508.7	456.9	430.2
52.5°	521.2	504.0	458.4	406.6	384.6
55°	467.9	453.7	411.3	362.7	343.8
57.5°	419.2	405.1	365.8	320.3	304.6
60°	373.7	353.2	320.3	281.0	268.5
62.5°	323.4	307.7	279.5	246.5	262.2
65°	277.9	262.2	237.1	241.8	201.0
67.5°	227.6	219.8	197.8	175.8	169.6
70°	185.3	175.8	168.0	144.4	138.2
72.5°	147.6	138.2	127.2	114.6	109.9
75°	111.5	103.6	97.3	92.6	102.0
77.5°	76.9	73.8	69.1	64.4	62.8
80°	50.2	48.7	47.1	45.5	44.0
82.5°	29.8	29.8	29.8	29.8	29.8
85°	15.7	17.3	18.8	20.4	22.0
87.5°	9.4	9.4	11.0	12.6	14.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)