

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: P561920

Luminaire Tested: FSR-24-2-LD4-1LO-35-UNV-81-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561920  
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-24-2-LD4-1LO-35-UNV-81-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

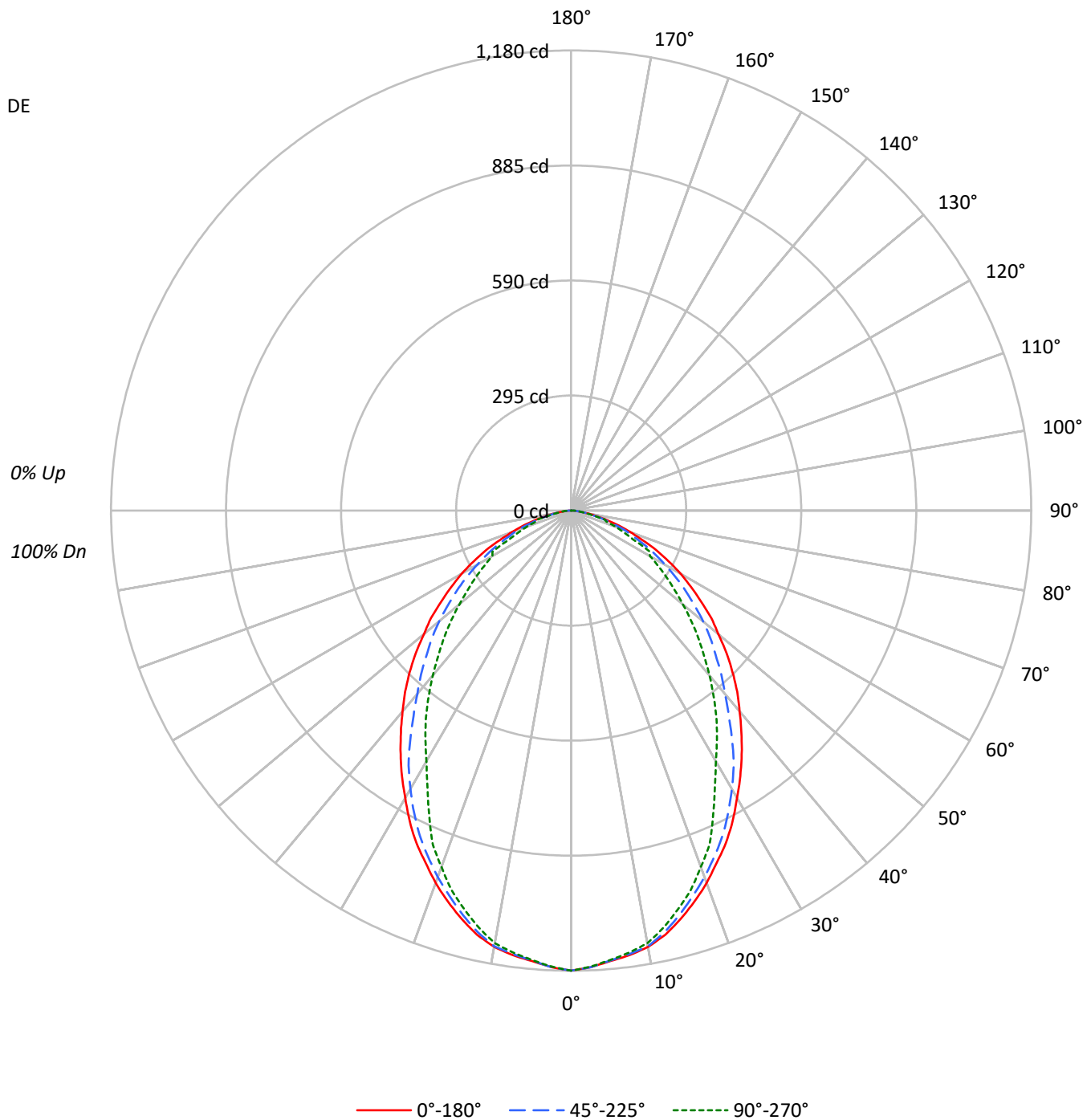
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2316.0 lumens  
Efficiency: N/A  
Efficacy: 99.0 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				
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77					75				
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67					65				
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58					56				
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52					50				
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46					44				
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42					40				
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38					36				
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34					33				
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32					30				

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

	0°	45°	90°
0°	1587	1587	1587
5°	1566	1564	1562
10°	1552	1550	1539
15°	1510	1495	1474
20°	1455	1431	1392
25°	1395	1365	1280
30°	1322	1280	1153
35°	1252	1183	1066
40°	1181	1078	970
45°	1113	997	877
50°	1031	925	782
55°	953	838	701
60°	873	749	628
65°	769	656	556
70°	633	574	472
75°	503	440	461
80°	338	317	296
85°	210	253	295

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1113 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.8	4.7
10°-20°	301.4	13.0
20°-30°	417.2	18.0
30°-40°	444.9	19.2
40°-50°	405.9	17.5
50°-60°	318.0	13.7
60°-70°	207.2	8.9
70°-80°	91.8	4.0
80°-90°	19.7	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°	828.5	35.8
0°-40°	1273.4	55.0
0°-60°	1997.2	86.2
0°-90°	2316.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2316.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1180	1180	1180	1180	1180	
5°	1159	1158	1158	1157	1157	110
15°	1084	1084	1073	1062	1058	305
25°	940	934	919	886	862	431
35°	762	757	720	666	649	477
45°	585	573	524	480	461	451
55°	406	394	357	315	299	365
65°	241	228	206	210	175	238
75°	97	90	85	80	89	104
85°	14	15	16	18	19	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1179.7	1179.7	1179.7	1179.7	1179.7
2.5°	1171.6	1171.6	1171.6	1170.2	1170.2
5°	1159.3	1157.9	1157.9	1156.6	1156.6
7.5°	1149.7	1148.4	1147.0	1145.6	1142.9
10°	1136.1	1136.1	1134.7	1127.9	1126.5
12.5°	1114.3	1112.9	1107.5	1097.9	1095.2
15°	1084.3	1084.3	1073.4	1062.4	1058.4
17.5°	1051.5	1050.2	1036.5	1025.6	1020.2
20°	1016.1	1013.3	999.7	982.0	972.4
22.5°	976.5	976.5	960.2	937.0	927.4
25°	939.7	934.2	919.2	886.5	862.0
27.5°	897.4	889.2	872.9	826.5	797.9
30°	851.0	847.0	823.8	763.8	741.9
32.5°	807.4	800.6	776.0	713.3	695.6
35°	762.4	756.9	720.1	665.6	649.2
37.5°	717.4	710.6	664.2	620.6	600.1
40°	672.4	664.2	613.7	574.2	552.4
42.5°	630.1	619.2	570.1	527.8	503.3
45°	585.1	572.8	523.7	480.1	461.0
47.5°	540.1	529.2	484.2	439.2	417.3
50°	492.4	482.8	441.9	396.9	373.7
52.5°	452.8	437.8	398.2	353.2	334.1
55°	406.4	394.2	357.3	315.1	298.7
57.5°	364.2	351.9	317.8	278.2	264.6
60°	324.6	306.9	278.2	244.1	233.2
62.5°	281.0	267.3	242.8	214.1	227.8
65°	241.4	227.8	205.9	210.0	174.6
67.5°	197.8	190.9	171.8	152.8	147.3
70°	160.9	152.8	145.9	125.5	120.0
72.5°	128.2	120.0	110.5	99.6	95.5
75°	96.8	90.0	84.6	80.5	88.7
77.5°	66.8	64.1	60.0	55.9	54.6
80°	43.6	42.3	40.9	39.6	38.2
82.5°	25.9	25.9	25.9	25.9	25.9
85°	13.6	15.0	16.4	17.7	19.1
87.5°	8.2	8.2	9.5	10.9	12.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)