

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: P562178

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-81-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562178  
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-40-UNV-81-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

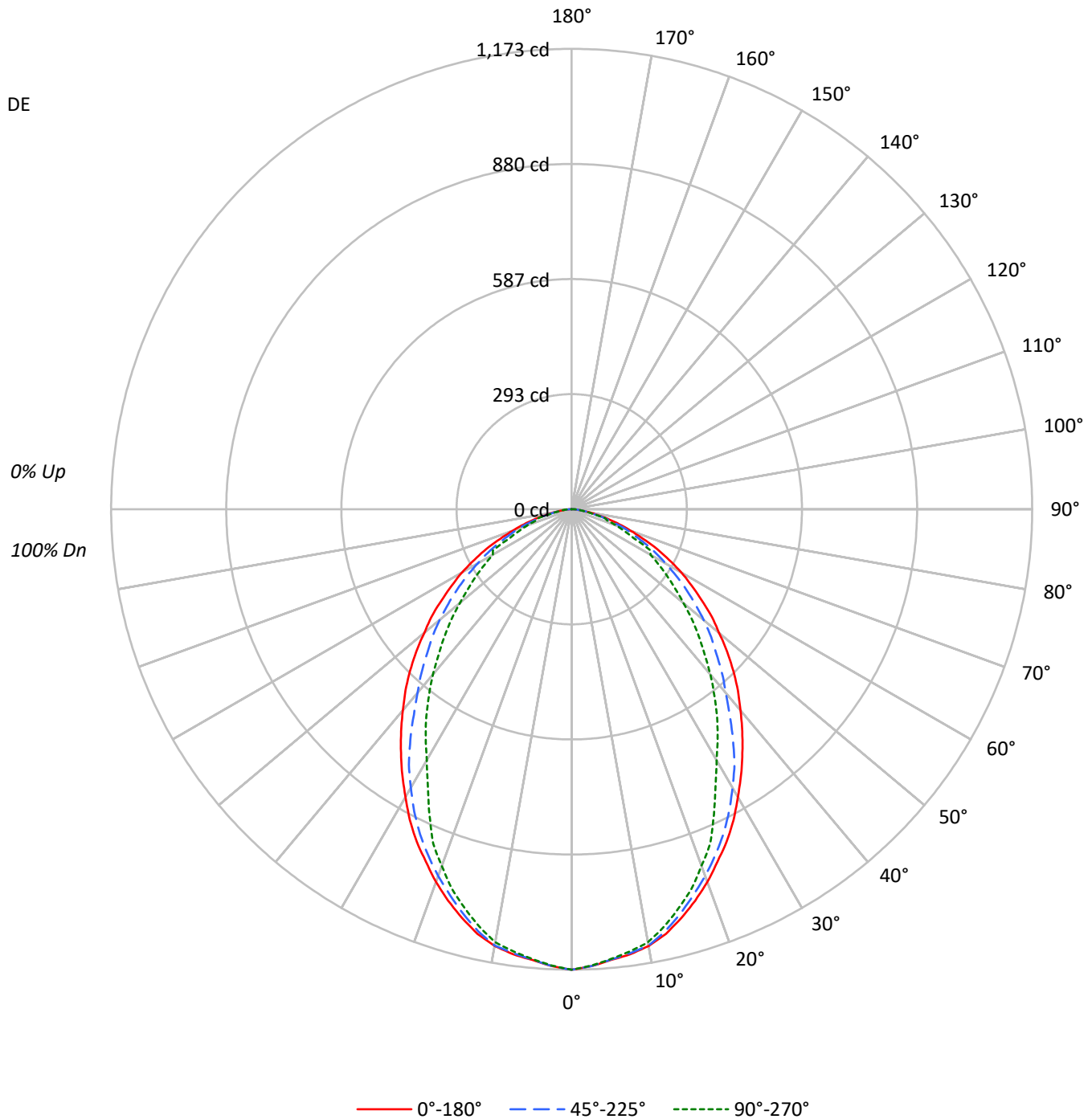
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2303.0 lumens  
Efficiency: N/A  
Efficacy: 98.4 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	50	30	10	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	1578	1578	1578
5°	1557	1555	1553
10°	1543	1542	1530
15°	1502	1487	1466
20°	1447	1423	1385
25°	1387	1357	1272
30°	1315	1273	1146
35°	1245	1176	1060
40°	1174	1072	965
45°	1107	991	872
50°	1025	920	778
55°	948	833	697
60°	869	745	624
65°	764	652	553
70°	629	571	469
75°	501	437	459
80°	336	315	294
85°	210	252	293

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1107 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.2	4.7
10°-20°	299.7	13.0
20°-30°	414.9	18.0
30°-40°	442.4	19.2
40°-50°	403.6	17.5
50°-60°	316.2	13.7
60°-70°	206.1	8.9
70°-80°	91.3	4.0
80°-90°	19.6	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°	823.8	35.8
0°-40°	1266.2	55.0
0°-60°	1986.0	86.2
0°-90°	2303.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2303.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1173	1173	1173	1173	1173	
5°	1153	1151	1151	1150	1150	109
15°	1078	1078	1067	1056	1052	303
25°	934	929	914	882	857	429
35°	758	753	716	662	646	474
45°	582	570	521	477	458	448
55°	404	392	355	313	297	362
65°	240	226	205	209	174	237
75°	96	90	84	80	88	103
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°	1173.1	1173.1	1173.1	1173.1	1173.1
2.5°	1165.0	1165.0	1165.0	1163.6	1163.6
5°	1152.8	1151.4	1151.4	1150.1	1150.1
7.5°	1143.3	1141.9	1140.6	1139.2	1136.5
10°	1129.7	1129.7	1128.4	1121.6	1120.2
12.5°	1108.0	1106.7	1101.2	1091.7	1089.0
15°	1078.2	1078.2	1067.3	1056.5	1052.4
17.5°	1045.6	1044.3	1030.7	1019.9	1014.4
20°	1010.4	1007.7	994.1	976.5	967.0
22.5°	971.0	971.0	954.8	931.7	922.2
25°	934.4	929.0	914.1	881.5	857.1
27.5°	892.4	884.2	868.0	821.9	793.4
30°	846.3	842.2	819.1	759.5	737.8
32.5°	802.9	796.1	771.7	709.3	691.7
35°	758.1	752.7	716.1	661.8	645.6
37.5°	713.4	706.6	660.5	617.1	596.7
40°	668.6	660.5	610.3	571.0	549.3
42.5°	626.6	615.7	566.9	524.9	500.4
45°	581.8	569.6	520.8	477.4	458.4
47.5°	537.1	526.2	481.5	436.7	415.0
50°	489.6	480.1	439.4	394.7	371.6
52.5°	450.3	435.3	396.0	351.3	332.3
55°	404.1	391.9	355.3	313.3	297.0
57.5°	362.1	349.9	316.0	276.7	263.1
60°	322.8	305.1	276.7	242.8	231.9
62.5°	279.4	265.8	241.4	212.9	226.5
65°	240.0	226.5	204.8	208.9	173.6
67.5°	196.6	189.9	170.9	151.9	146.5
70°	160.0	151.9	145.1	124.8	119.3
72.5°	127.5	119.3	109.9	99.0	94.9
75°	96.3	89.5	84.1	80.0	88.2
77.5°	66.5	63.7	59.7	55.6	54.2
80°	43.4	42.0	40.7	39.3	38.0
82.5°	25.8	25.8	25.8	25.8	25.8
85°	13.6	14.9	16.3	17.6	19.0
87.5°	8.1	8.1	9.5	10.8	12.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)