

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: P560965

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560965  
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-12-4-LD4-1LO-35-UNV-81-86-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

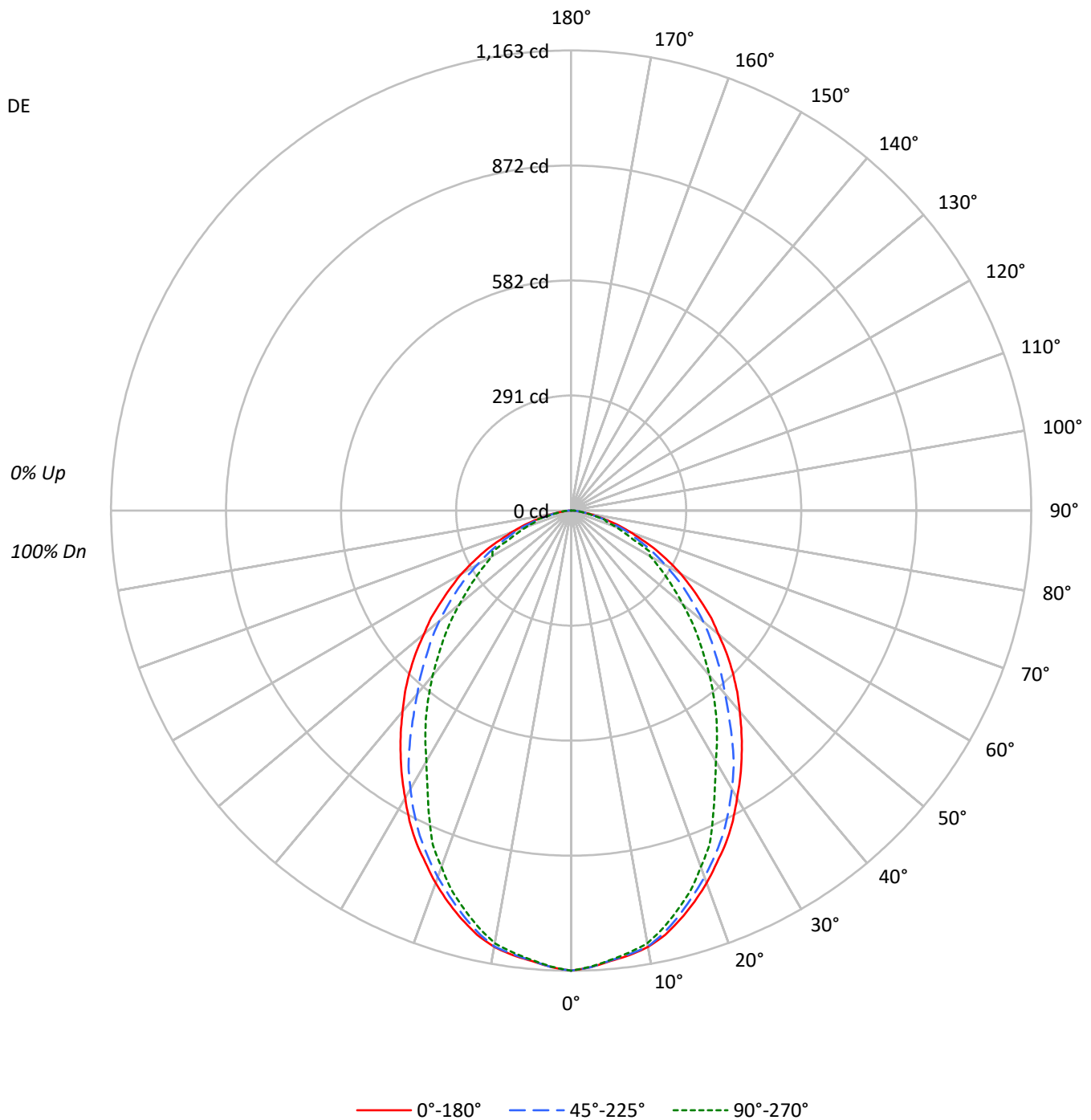
Lumens per Lamp: N/A  
Luminaire Lumens: 2283.0 lumens  
Efficiency: N/A  
Efficacy: 97.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3129	3129	3129
5°	3087	3083	3080
10°	3060	3057	3034
15°	2978	2948	2907
20°	2868	2822	2745
25°	2750	2690	2523
30°	2607	2523	2273
35°	2469	2332	2102
40°	2328	2125	1913
45°	2195	1965	1729
50°	2032	1824	1542
55°	1879	1652	1381
60°	1722	1476	1237
65°	1515	1293	1096
70°	1248	1132	931
75°	993	867	909
80°	666	625	583
85°	414	497	580

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2195 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.3	4.7
10°-20°	297.1	13.0
20°-30°	411.3	18.0
30°-40°	438.6	19.2
40°-50°	400.1	17.5
50°-60°	313.5	13.7
60°-70°	204.3	8.9
70°-80°	90.5	4.0
80°-90°	19.4	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°	816.6	35.8
0°-40°	1255.2	55.0
0°-60°	1968.8	86.2
0°-90°	2283.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2283.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1163	1163	1163	1163	1163	
5°	1143	1141	1141	1140	1140	108
15°	1069	1069	1058	1047	1043	300
25°	926	921	906	874	850	425
35°	752	746	710	656	640	470
45°	577	565	516	473	454	444
55°	401	388	352	311	294	359
65°	238	224	203	207	172	235
75°	96	89	83	79	87	102
85°	13	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°	<i>1162.9</i>	<i>1162.9</i>	<i>1162.9</i>	<i>1162.9</i>	<i>1162.9</i>
2.5°	<i>1154.9</i>	1154.9	1154.9	1153.5	1153.5
5°	<i>1142.8</i>	1141.4	1141.4	1140.1	1140.1
7.5°	<i>1133.4</i>	1132.0	1130.7	1129.3	1126.6
10°	<i>1119.9</i>	1119.9	1118.6	1111.8	1110.5
12.5°	<i>1098.4</i>	1097.1	1091.7	1082.3	1079.6
15°	<i>1068.8</i>	1068.8	1058.1	1047.3	1043.3
17.5°	<i>1036.6</i>	1035.2	1021.8	1011.0	1005.6
20°	<i>1001.6</i>	998.9	985.5	968.0	958.6
22.5°	<i>962.6</i>	962.6	946.5	923.6	914.2
25°	<i>926.3</i>	920.9	906.1	873.9	849.7
27.5°	<i>884.6</i>	876.6	860.4	814.7	786.5
30°	<i>838.9</i>	834.9	812.0	752.9	731.4
32.5°	<i>795.9</i>	789.2	765.0	703.1	685.7
35°	<i>751.5</i>	746.2	709.9	656.1	639.9
37.5°	<i>707.2</i>	700.4	654.7	611.7	591.5
40°	<i>662.8</i>	654.7	605.0	566.0	544.5
42.5°	<i>621.1</i>	610.4	562.0	520.3	496.1
45°	<i>576.8</i>	564.7	516.3	473.2	454.4
47.5°	<i>532.4</i>	521.6	477.3	432.9	411.4
50°	<i>485.3</i>	475.9	435.6	391.2	368.4
52.5°	<i>446.3</i>	431.6	392.6	348.2	329.4
55°	<i>400.6</i>	388.5	352.2	310.6	294.4
57.5°	<i>359.0</i>	346.9	313.3	274.3	260.8
60°	<i>320.0</i>	302.5	274.3	240.7	229.9
62.5°	<i>277.0</i>	263.5	239.3	211.1	224.5
65°	<i>238.0</i>	224.5	203.0	207.0	172.1
67.5°	<i>194.9</i>	188.2	169.4	150.6	145.2
70°	<i>158.6</i>	150.6	143.9	123.7	118.3
72.5°	<i>126.4</i>	118.3	108.9	98.1	94.1
75°	<i>95.5</i>	88.7	83.4	79.3	87.4
77.5°	<i>65.9</i>	63.2	59.2	55.1	53.8
80°	<i>43.0</i>	41.7	40.3	39.0	37.6
82.5°	<i>25.5</i>	25.5	25.5	25.5	25.5
85°	<i>13.4</i>	14.8	16.1	17.5	18.8
87.5°	<i>8.1</i>	8.1	9.4	10.8	12.1
90°	<i>0.0</i>	0.0	0.0	0.0	0.0

(END OF REPORT)