

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: P563461

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563461  
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-LD4-3STD-35-UNV-81-86-EDD  
Description: 2X4 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**

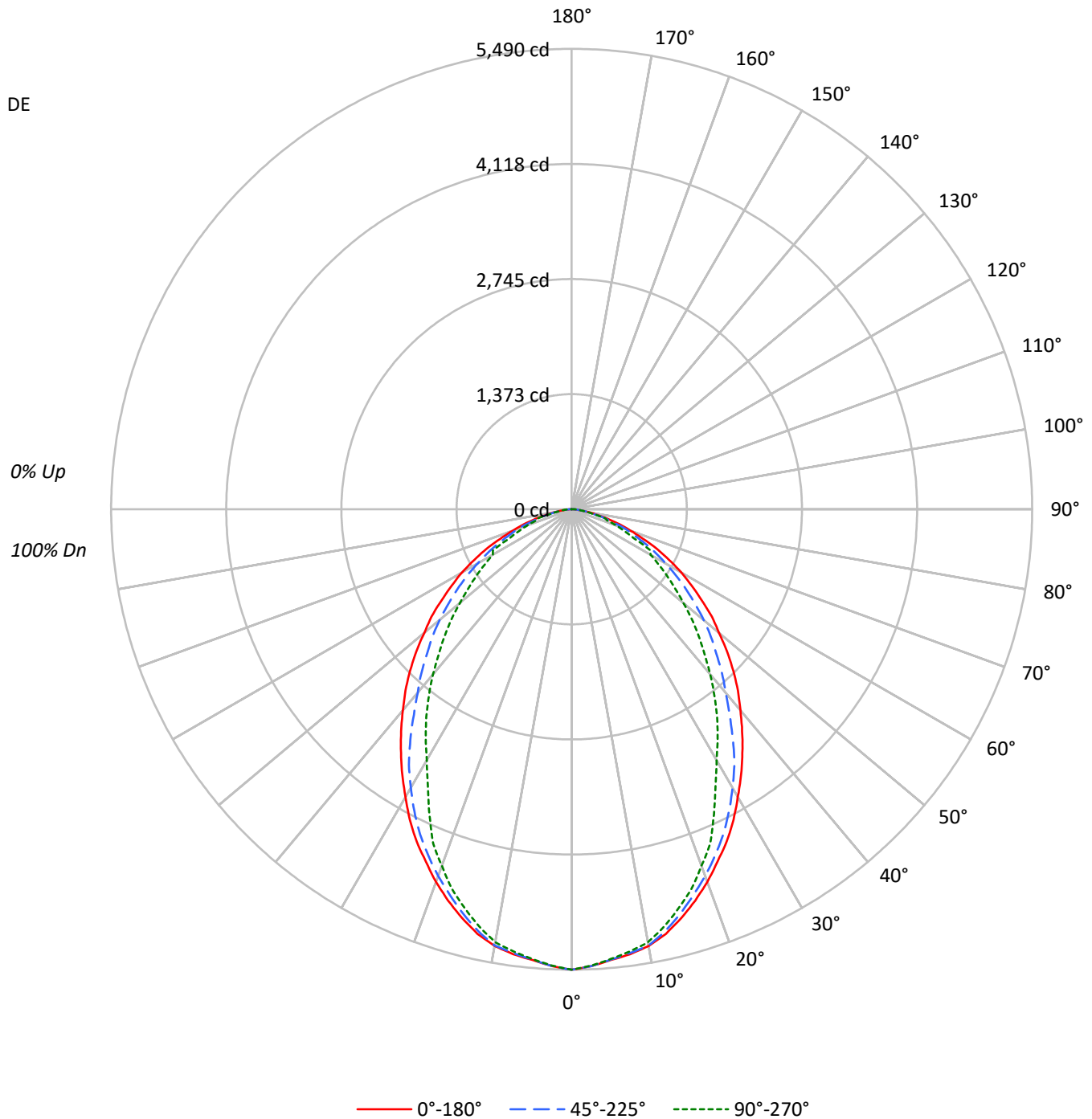
Lumens per Lamp: N/A  
Luminaire Lumens: 10778.0 lumens  
Efficiency: N/A  
Efficacy: 107.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7387	7387	7387
5°	7287	7278	7269
10°	7223	7215	7163
15°	7029	6958	6861
20°	6770	6661	6480
25°	6492	6351	5955
30°	6153	5956	5364
35°	5828	5504	4962
40°	5496	5017	4515
45°	5181	4638	4082
50°	4796	4304	3640
55°	4437	3901	3261
60°	4065	3484	2921
65°	3577	3051	2586
70°	2946	2672	2197
75°	2342	2046	2145
80°	1574	1475	1377
85°	980	1176	1372

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5181 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	511.1	4.7
10°-20°	1402.6	13.0
20°-30°	1941.8	18.0
30°-40°	2070.5	19.2
40°-50°	1888.9	17.5
50°-60°	1479.8	13.7
60°-70°	964.5	8.9
70°-80°	427.3	4.0
80°-90°	91.7	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°	3855.4	35.8
0°-40°	5925.9	55.0
0°-60°	9294.5	86.2
0°-90°	10778.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10778.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5490	5490	5490	5490	5490	
5°	5395	5389	5389	5382	5382	512
15°	5046	5046	4995	4944	4925	1419
25°	4373	4348	4278	4126	4011	2008
35°	3548	3523	3351	3097	3021	2218
45°	2723	2666	2437	2234	2145	2097
55°	1891	1834	1663	1466	1390	1696
65°	1123	1060	958	977	812	1107
75°	451	419	394	374	413	483
85°	64	70	76	82	89	88
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5490.2	5490.2	5490.2	5490.2	5490.2
2.5°	5452.1	5452.1	5452.1	5445.7	5445.7
5°	5395.0	5388.6	5388.6	5382.3	5382.3
7.5°	5350.5	5344.2	5337.8	5331.5	5318.8
10°	5287.1	5287.1	5280.7	5249.0	5242.6
12.5°	5185.5	5179.2	5153.8	5109.3	5096.7
15°	5045.9	5045.9	4995.1	4944.3	4925.3
17.5°	4893.5	4887.2	4823.7	4773.0	4747.6
20°	4728.5	4715.8	4652.4	4569.9	4525.4
22.5°	4544.5	4544.5	4468.3	4360.4	4316.0
25°	4373.1	4347.7	4277.9	4125.6	4011.3
27.5°	4176.3	4138.3	4062.1	3846.3	3713.0
30°	3960.5	3941.5	3833.6	3554.3	3452.8
32.5°	3757.4	3725.7	3611.5	3319.5	3237.0
35°	3548.0	3522.6	3351.2	3097.3	3021.2
37.5°	3338.5	3306.8	3091.0	2887.9	2792.7
40°	3129.1	3091.0	2856.2	2672.1	2570.5
42.5°	2932.3	2881.5	2653.1	2456.3	2342.0
45°	2722.9	2665.7	2437.3	2234.1	2145.3
47.5°	2513.4	2462.6	2253.2	2043.7	1942.2
50°	2291.3	2246.8	2056.4	1847.0	1739.1
52.5°	2107.2	2037.4	1853.3	1643.9	1555.0
55°	1891.4	1834.3	1662.9	1466.2	1390.0
57.5°	1694.7	1637.5	1478.9	1294.8	1231.3
60°	1510.6	1428.1	1294.8	1136.1	1085.3
62.5°	1307.5	1244.0	1129.8	996.5	1060.0
65°	1123.4	1060.0	958.4	977.4	812.4
67.5°	920.3	888.6	799.7	710.9	685.5
70°	748.9	710.9	679.1	583.9	558.5
72.5°	596.6	558.5	514.1	463.3	444.3
75°	450.6	418.9	393.5	374.5	412.6
77.5°	311.0	298.3	279.3	260.2	253.9
80°	203.1	196.8	190.4	184.1	177.7
82.5°	120.6	120.6	120.6	120.6	120.6
85°	63.5	69.8	76.2	82.5	88.9
87.5°	38.1	38.1	44.4	50.8	57.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)