

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: P563145

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-81-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563145  
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-LD4-3HI-40-UNV-81-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

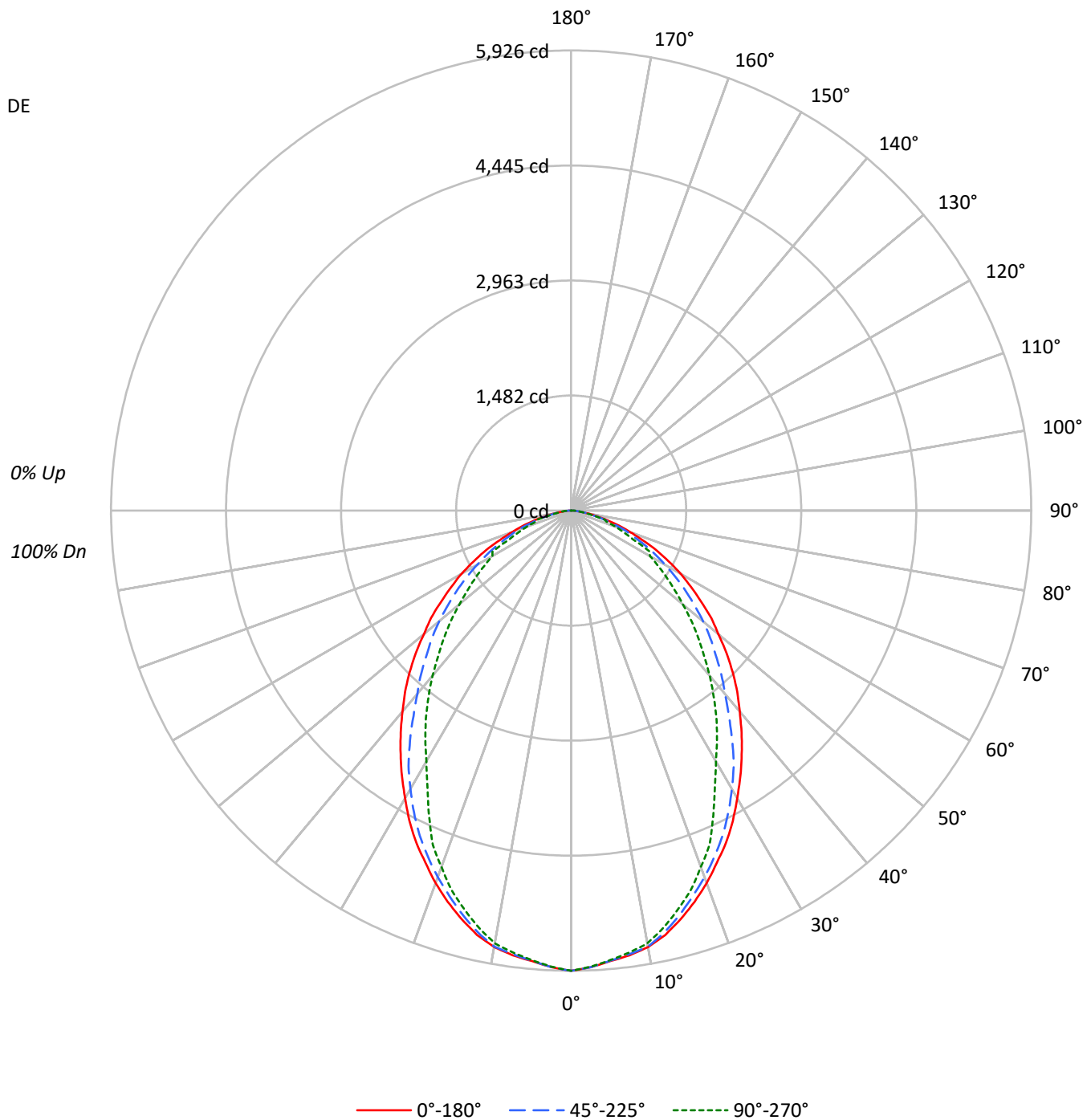
Lumens per Lamp: N/A  
Luminaire Lumens: 11634.0 lumens  
Efficiency: N/A  
Efficacy: 89.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	7974	7974	7974
5°	7865	7856	7847
10°	7797	7788	7732
15°	7587	7511	7406
20°	7308	7191	6994
25°	7008	6855	6428
30°	6642	6429	5790
35°	6291	5942	5356
40°	5932	5415	4874
45°	5593	5006	4406
50°	5177	4647	3929
55°	4789	4211	3520
60°	4388	3761	3152
65°	3861	3294	2792
70°	3180	2884	2372
75°	2529	2208	2315
80°	1698	1592	1486
85°	1057	1269	1480

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5593 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	551.6	4.7
10°-20°	1514.0	13.0
20°-30°	2096.0	18.0
30°-40°	2234.9	19.2
40°-50°	2038.9	17.5
50°-60°	1597.3	13.7
60°-70°	1041.0	8.9
70°-80°	461.2	4.0
80°-90°	99.0	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°	4161.6	35.8
0°-40°	6396.5	55.0
0°-60°	10032.7	86.2
0°-90°	11634.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11634.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5926	5926	5926	5926	5926	
5°	5823	5817	5817	5810	5810	553
15°	5447	5447	5392	5337	5316	1531
25°	4720	4693	4618	4453	4330	2167
35°	3830	3802	3617	3343	3261	2394
45°	2939	2878	2631	2412	2316	2264
55°	2042	1980	1795	1583	1500	1831
65°	1213	1144	1034	1055	877	1195
75°	486	452	425	404	445	521
85°	68	75	82	89	96	95
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5926.2	5926.2	5926.2	5926.2	5926.2
2.5°	5885.1	5885.1	5885.1	5878.2	5878.2
5°	5823.4	5816.6	5816.6	5809.7	5809.7
7.5°	5775.5	5768.6	5761.8	5754.9	5741.2
10°	5707.0	5707.0	5700.1	5665.9	5659.0
12.5°	5597.4	5590.5	5563.1	5515.1	5501.4
15°	5446.6	5446.6	5391.8	5337.0	5316.5
17.5°	5282.2	5275.3	5206.8	5152.0	5124.6
20°	5104.1	5090.4	5021.9	4932.8	4884.8
22.5°	4905.4	4905.4	4823.2	4706.7	4658.8
25°	4720.4	4693.0	4617.6	4453.2	4329.9
27.5°	4508.0	4466.9	4384.7	4151.8	4007.9
30°	4275.1	4254.5	4138.1	3836.6	3727.0
32.5°	4055.9	4021.6	3898.3	3583.1	3494.1
35°	3829.8	3802.4	3617.4	3343.3	3261.1
37.5°	3603.7	3569.4	3336.5	3117.3	3014.5
40°	3377.6	3336.5	3083.0	2884.3	2774.7
42.5°	3165.2	3110.4	2863.8	2651.4	2528.1
45°	2939.1	2877.5	2630.8	2411.6	2315.7
47.5°	2713.0	2658.2	2432.1	2206.1	2096.4
50°	2473.2	2425.3	2219.8	1993.7	1877.2
52.5°	2274.6	2199.2	2000.5	1774.4	1678.5
55°	2041.6	1980.0	1795.0	1582.6	1500.4
57.5°	1829.2	1767.6	1596.3	1397.6	1329.1
60°	1630.6	1541.5	1397.6	1226.3	1171.5
62.5°	1411.3	1342.8	1219.5	1075.6	1144.1
65°	1212.6	1144.1	1034.5	1055.1	876.9
67.5°	993.4	959.2	863.2	767.3	739.9
70°	808.4	767.3	733.1	630.3	602.9
72.5°	644.0	602.9	554.9	500.1	479.6
75°	486.4	452.2	424.8	404.2	445.3
77.5°	335.7	322.0	301.4	280.9	274.0
80°	219.2	212.4	205.5	198.7	191.8
82.5°	130.2	130.2	130.2	130.2	130.2
85°	68.5	75.4	82.2	89.1	95.9
87.5°	41.1	41.1	48.0	54.8	61.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)