

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: P563857

Luminaire Tested: FSR-24-4-LD4-4LO-35-UNV-82-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563857  
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-LD4-4LO-35-UNV-82-84-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

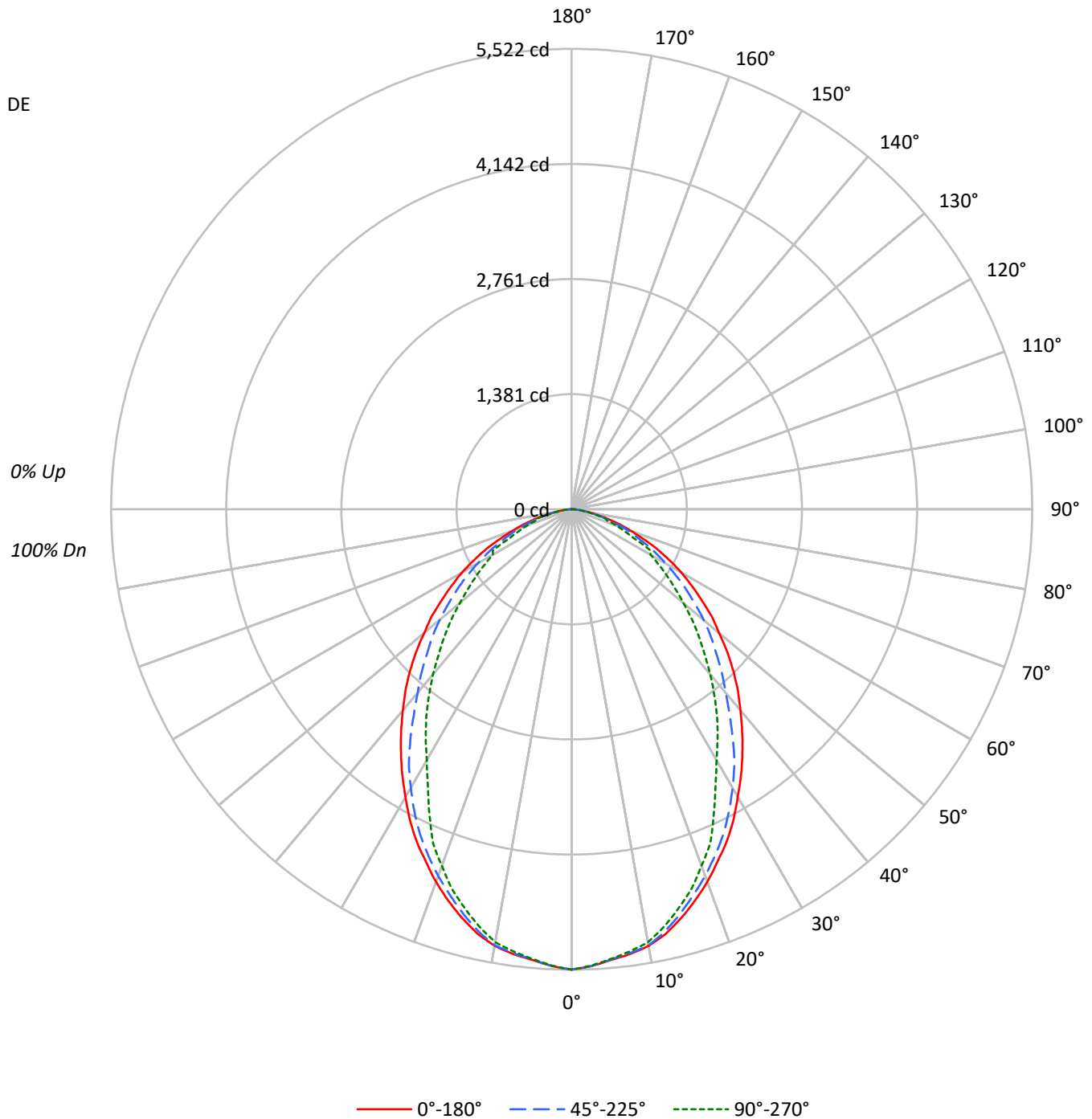
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10840.0 lumens  
Efficiency: N/A  
Efficacy: 115.8 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): 93.6  
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	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°	7430	7430	7430
5°	7329	7320	7311
10°	7265	7256	7204
15°	7069	6998	6900
20°	6809	6700	6517
25°	6530	6387	5989
30°	6189	5990	5395
35°	5861	5536	4991
40°	5528	5045	4541
45°	5211	4664	4106
50°	4824	4329	3661
55°	4462	3923	3279
60°	4088	3504	2937
65°	3597	3069	2601
70°	2963	2687	2210
75°	2356	2058	2157
80°	1583	1484	1385
85°	985	1183	1380

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5211 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	514.0	4.7
10°-20°	1410.6	13.0
20°-30°	1952.9	18.0
30°-40°	2082.4	19.2
40°-50°	1899.7	17.5
50°-60°	1488.3	13.7
60°-70°	970.0	8.9
70°-80°	429.8	4.0
80°-90°	92.3	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°	3877.6	35.8
0°-40°	5960.0	55.0
0°-60°	9348.0	86.2
0°-90°	10840.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10840.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5522	5522	5522	5522	5522	
5°	5426	5420	5420	5413	5413	515
15°	5075	5075	5024	4973	4954	1427
25°	4398	4373	4302	4149	4034	2019
35°	3568	3543	3370	3115	3039	2231
45°	2738	2681	2451	2247	2158	2109
55°	1902	1845	1672	1475	1398	1706
65°	1130	1066	964	983	817	1114
75°	453	421	396	377	415	486
85°	64	70	77	83	89	89
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5521.8	5521.8	5521.8	5521.8	5521.8
2.5°	5483.5	5483.5	5483.5	5477.1	5477.1
5°	5426.0	5419.6	5419.6	5413.2	5413.2
7.5°	5381.3	5374.9	5368.5	5362.2	5349.4
10°	5317.5	5317.5	5311.1	5279.2	5272.8
12.5°	5215.3	5209.0	5183.4	5138.7	5126.0
15°	5074.9	5074.9	5023.8	4972.8	4953.6
17.5°	4921.7	4915.3	4851.5	4800.4	4774.9
20°	4755.7	4743.0	4679.1	4596.1	4551.5
22.5°	4570.6	4570.6	4494.0	4385.5	4340.8
25°	4398.3	4372.7	4302.5	4149.3	4034.4
27.5°	4200.4	4162.1	4085.5	3868.4	3734.4
30°	3983.3	3964.2	3855.7	3574.8	3472.6
32.5°	3779.0	3747.1	3632.2	3338.6	3255.6
35°	3568.4	3542.9	3370.5	3115.2	3038.6
37.5°	3357.7	3325.8	3108.8	2904.5	2808.8
40°	3147.1	3108.8	2872.6	2687.5	2585.3
42.5°	2949.2	2898.1	2668.3	2470.4	2355.5
45°	2738.5	2681.1	2451.3	2247.0	2157.6
47.5°	2527.9	2476.8	2266.2	2055.5	1953.4
50°	2304.5	2259.8	2068.3	1857.6	1749.1
52.5°	2119.3	2049.1	1864.0	1653.3	1564.0
55°	1902.3	1844.8	1672.5	1474.6	1398.0
57.5°	1704.4	1647.0	1487.4	1302.2	1238.4
60°	1519.3	1436.3	1302.2	1142.7	1091.6
62.5°	1315.0	1251.2	1136.3	1002.2	1066.0
65°	1129.9	1066.0	963.9	983.1	817.1
67.5°	925.6	893.7	804.3	715.0	689.4
70°	753.3	715.0	683.0	587.3	561.8
72.5°	600.1	561.8	517.1	466.0	446.8
75°	453.2	421.3	395.8	376.6	414.9
77.5°	312.8	300.0	280.9	261.7	255.3
80°	204.3	197.9	191.5	185.1	178.7
82.5°	121.3	121.3	121.3	121.3	121.3
85°	63.8	70.2	76.6	83.0	89.4
87.5°	38.3	38.3	44.7	51.1	57.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)