

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: P564105

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564105  
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-LD4-4STD-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**

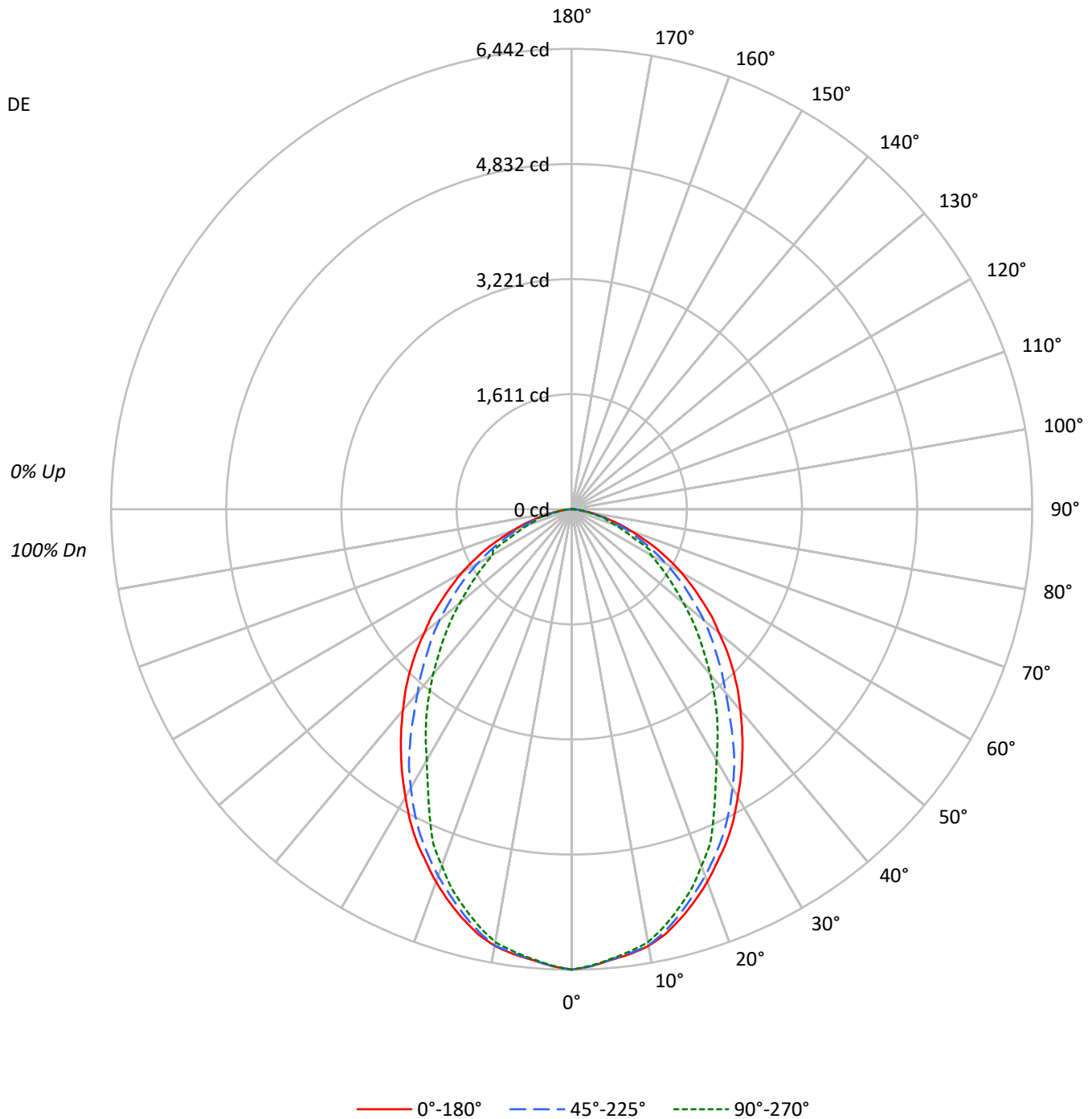
Lumens per Lamp: N/A  
Luminaire Lumens: 12646.0 lumens  
Efficiency: N/A  
Efficacy: 94.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	8667	8667	8667
5°	8549	8539	8529
10°	8475	8465	8404
15°	8247	8164	8050
20°	7944	7816	7603
25°	7617	7452	6987
30°	7220	6988	6294
35°	6838	6458	5822
40°	6448	5886	5298
45°	6079	5441	4790
50°	5627	5050	4271
55°	5206	4577	3826
60°	4769	4088	3427
65°	4196	3580	3035
70°	3457	3135	2578
75°	2748	2400	2517
80°	1846	1731	1616
85°	1150	1380	1610

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6079 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	599.6	4.7
10°-20°	1645.7	13.0
20°-30°	2278.3	18.0
30°-40°	2429.3	19.2
40°-50°	2216.3	17.5
50°-60°	1736.2	13.7
60°-70°	1131.6	8.9
70°-80°	501.3	4.0
80°-90°	107.6	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°	4523.6	35.8
0°-40°	6952.9	55.0
0°-60°	10905.4	86.2
0°-90°	12646.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12646.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6442	6442	6442	6442	6442	
5°	6330	6323	6323	6315	6315	601
15°	5920	5920	5861	5801	5779	1664
25°	5131	5101	5019	4841	4706	2356
35°	4163	4133	3932	3634	3545	2603
45°	3195	3128	2860	2621	2517	2461
55°	2219	2152	1951	1720	1631	1990
65°	1318	1244	1124	1147	953	1299
75°	529	492	462	439	484	567
85°	74	82	89	97	104	103
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6441.7	6441.7	6441.7	6441.7	6441.7
2.5°	6397.0	6397.0	6397.0	6389.6	6389.6
5°	6330.0	6322.6	6322.6	6315.1	6315.1
7.5°	6277.9	6270.4	6263.0	6255.5	6240.6
10°	6203.4	6203.4	6196.0	6158.7	6151.3
12.5°	6084.2	6076.8	6047.0	5994.9	5980.0
15°	5920.4	5920.4	5860.8	5801.3	5778.9
17.5°	5741.7	5734.2	5659.8	5600.2	5570.4
20°	5548.1	5533.2	5458.7	5361.9	5309.8
22.5°	5332.1	5332.1	5242.7	5116.1	5064.0
25°	5131.0	5101.2	5019.3	4840.6	4706.5
27.5°	4900.2	4855.5	4766.1	4512.9	4356.5
30°	4647.0	4624.6	4498.0	4170.4	4051.2
32.5°	4408.7	4371.4	4237.4	3894.8	3798.0
35°	4162.9	4133.1	3932.0	3634.2	3544.8
37.5°	3917.2	3879.9	3626.7	3388.4	3276.7
40°	3671.4	3626.7	3351.2	3135.2	3016.1
42.5°	3440.5	3381.0	3112.9	2882.0	2748.0
45°	3194.8	3127.8	2859.7	2621.4	2517.1
47.5°	2949.0	2889.5	2643.7	2398.0	2278.8
50°	2688.4	2636.3	2412.8	2167.1	2040.5
52.5°	2472.4	2390.5	2174.5	1928.8	1824.5
55°	2219.2	2152.2	1951.1	1720.3	1630.9
57.5°	1988.4	1921.3	1735.2	1519.2	1444.7
60°	1772.4	1675.6	1519.2	1333.0	1273.4
62.5°	1534.1	1459.6	1325.6	1169.2	1243.7
65°	1318.1	1243.7	1124.5	1146.8	953.2
67.5°	1079.8	1042.6	938.3	834.1	804.3
70°	878.8	834.1	796.8	685.1	655.3
72.5°	700.0	655.3	603.2	543.6	521.3
75°	528.7	491.5	461.7	439.4	484.1
77.5°	364.9	350.0	327.7	305.3	297.9
80°	238.3	230.9	223.4	216.0	208.5
82.5°	141.5	141.5	141.5	141.5	141.5
85°	74.5	81.9	89.4	96.8	104.3
87.5°	44.7	44.7	52.1	59.6	67.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)