

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: P563812

Luminaire Tested: FSR-24-4-LD4-4HI-50-UNV-93-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563812
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-LD4-4HI-50-UNV-93-86-EDD-90
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16613.0 lumens
Efficiency: N/A
Efficacy: 96.1 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

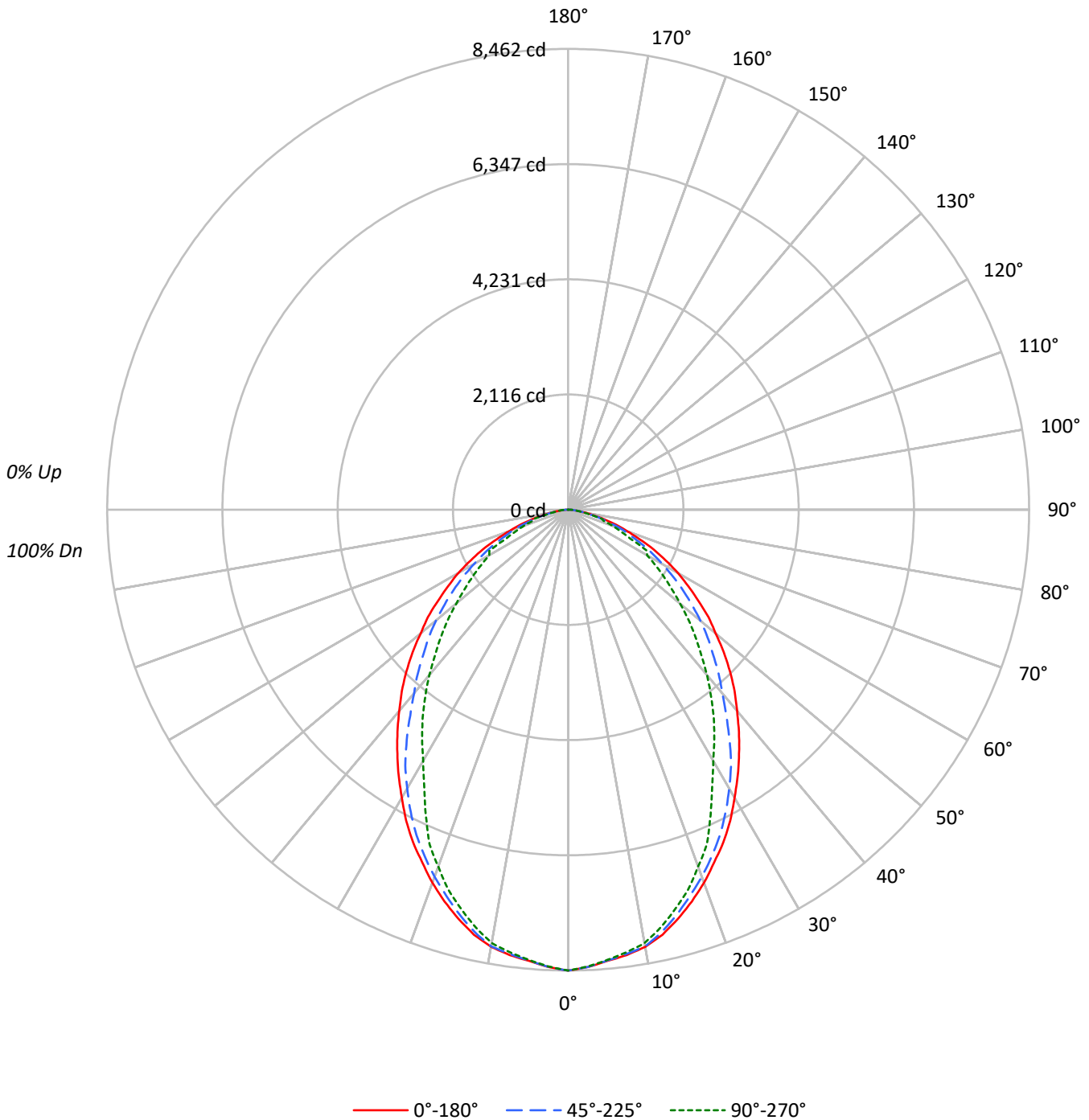
Input Watts (W): 172.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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					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°	11386	11386	11386
5°	11231	11218	11205
10°	11134	11121	11040
15°	10834	10725	10575
20°	10436	10268	9988
25°	10007	9789	9179
30°	9484	9180	8268
35°	8983	8485	7649
40°	8471	7732	6959
45°	7986	7148	6292
50°	7393	6635	5611
55°	6839	6013	5026
60°	6266	5371	4502
65°	5513	4703	3987
70°	4541	4118	3387
75°	3611	3153	3306
80°	2426	2274	2122
85°	1510	1812	2115

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 7986 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	787.7	4.7
10°-20°	2161.9	13.0
20°-30°	2993.0	18.0
30°-40°	3191.4	19.2
40°-50°	2911.5	17.5
50°-60°	2280.9	13.7
60°-70°	1486.6	8.9
70°-80°	658.6	4.0
80°-90°	141.4	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°	5942.6	35.8
0°-40°	9134.0	55.0
0°-60°	14326.4	86.2
0°-90°	16613.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16613.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8462	8462	8462	8462	8462	
5°	8316	8306	8306	8296	8296	789
15°	7778	7778	7699	7621	7592	2186
25°	6741	6702	6594	6359	6183	3095
35°	5469	5430	5166	4774	4657	3419
45°	4197	4109	3757	3444	3307	3233
55°	2915	2827	2563	2260	2142	2615
65°	1732	1634	1477	1507	1252	1707
75°	695	646	607	577	636	744
85°	98	108	117	127	137	136
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	8462.4	8462.4	8462.4	8462.4	8462.4
2.5°	8403.7	8403.7	8403.7	8394.0	8394.0
5°	8315.7	8305.9	8305.9	8296.1	8296.1
7.5°	8247.2	8237.4	8227.6	8217.9	8198.3
10°	8149.4	8149.4	8139.6	8090.7	8080.9
12.5°	7992.8	7983.1	7943.9	7875.5	7855.9
15°	7777.6	7777.6	7699.4	7621.1	7591.7
17.5°	7542.8	7533.0	7435.2	7356.9	7317.8
20°	7288.5	7268.9	7171.1	7043.9	6975.4
22.5°	7004.7	7004.7	6887.4	6721.0	6652.6
25°	6740.6	6701.5	6593.9	6359.1	6183.0
27.5°	6437.3	6378.6	6261.2	5928.6	5723.2
30°	6104.7	6075.3	5909.0	5478.6	5322.0
32.5°	5791.6	5742.7	5566.6	5116.6	4989.4
35°	5468.8	5429.7	5165.5	4774.2	4656.8
37.5°	5145.9	5097.0	4764.4	4451.3	4304.6
40°	4823.1	4764.4	4402.4	4118.7	3962.2
42.5°	4519.8	4441.6	4089.4	3786.1	3610.0
45°	4197.0	4108.9	3756.7	3443.7	3306.7
47.5°	3874.1	3795.9	3473.0	3150.2	2993.6
50°	3531.7	3463.2	3169.7	2846.9	2680.6
52.5°	3248.0	3140.4	2856.7	2533.8	2396.9
55°	2915.4	2827.3	2563.2	2259.9	2142.5
57.5°	2612.1	2524.1	2279.5	1995.8	1897.9
60°	2328.4	2201.2	1995.8	1751.2	1672.9
62.5°	2015.3	1917.5	1741.4	1536.0	1633.8
65°	1731.6	1633.8	1477.3	1506.6	1252.2
67.5°	1418.6	1369.6	1232.7	1095.7	1056.6
70°	1154.4	1095.7	1046.8	900.1	860.9
72.5°	919.6	860.9	792.4	714.2	684.8
75°	694.6	645.7	606.6	577.2	635.9
77.5°	479.4	459.8	430.5	401.1	391.3
80°	313.1	303.3	293.5	283.7	273.9
82.5°	185.9	185.9	185.9	185.9	185.9
85°	97.8	107.6	117.4	127.2	137.0
87.5°	58.7	58.7	68.5	78.3	88.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)