

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: P563744

Luminaire Tested: FSR-24-4-LD4-4HI-40-UNV-93-84-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P563744
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-40-UNV-93-84-EDD-90
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16280.0 lumens
Efficiency: N/A
Efficacy: 94.2 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

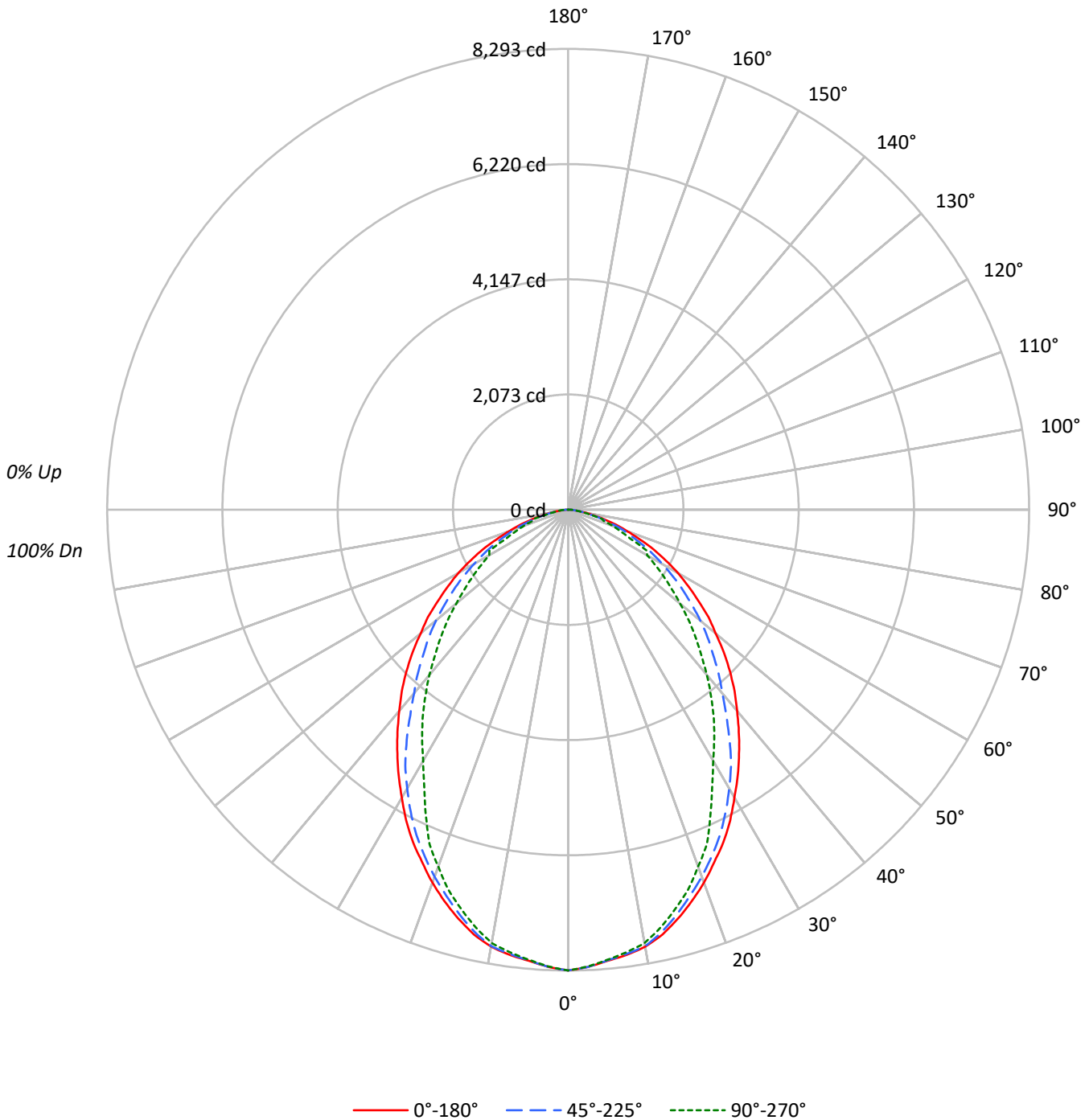
Input Watts (W): 172.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	11158	11158	11158
5°	11006	10993	10980
10°	10911	10898	10819
15°	10617	10510	10363
20°	10227	10062	9787
25°	9806	9593	8995
30°	9294	8996	8103
35°	8803	8315	7496
40°	8302	7578	6820
45°	7826	7005	6166
50°	7244	6502	5499
55°	6702	5892	4925
60°	6140	5263	4412
65°	5402	4609	3907
70°	4450	4035	3319
75°	3539	3090	3240
80°	2377	2228	2080
85°	1480	1775	2072

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 7826 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	771.9	4.7
10°-20°	2118.5	13.0
20°-30°	2933.0	18.0
30°-40°	3127.4	19.2
40°-50°	2853.1	17.5
50°-60°	2235.2	13.7
60°-70°	1456.8	8.9
70°-80°	645.4	4.0
80°-90°	138.6	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°	5823.5	35.8
0°-40°	8950.9	55.0
0°-60°	14039.2	86.2
0°-90°	16280.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16280.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	8293	8293	8293	8293	8293	
5°	8149	8139	8139	8130	8130	774
15°	7622	7622	7545	7468	7440	2143
25°	6606	6567	6462	6232	6059	3033
35°	5359	5321	5062	4678	4563	3350
45°	4113	4027	3681	3375	3240	3168
55°	2857	2771	2512	2215	2100	2562
65°	1697	1601	1448	1476	1227	1672
75°	681	633	594	566	623	730
85°	96	106	115	125	134	133
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	8292.8	8292.8	8292.8	8292.8	8292.8
2.5°	8235.3	8235.3	8235.3	8225.7	8225.7
5°	8149.0	8139.4	8139.4	8129.8	8129.8
7.5°	8081.9	8072.3	8062.7	8053.1	8034.0
10°	7986.0	7986.0	7976.4	7928.5	7918.9
12.5°	7832.6	7823.0	7784.7	7717.6	7698.4
15°	7621.7	7621.7	7545.0	7468.3	7439.6
17.5°	7391.6	7382.0	7286.2	7209.5	7171.1
20°	7142.4	7123.2	7027.3	6902.7	6835.6
22.5°	6864.3	6864.3	6749.3	6586.3	6519.2
25°	6605.5	6567.1	6461.7	6231.6	6059.0
27.5°	6308.3	6250.8	6135.7	5809.8	5608.4
30°	5982.3	5953.6	5790.6	5368.8	5215.4
32.5°	5675.5	5627.6	5455.0	5014.0	4889.4
35°	5359.2	5320.8	5062.0	4678.5	4563.4
37.5°	5042.8	4994.9	4668.9	4362.1	4218.3
40°	4726.4	4668.9	4314.2	4036.2	3882.8
42.5°	4429.2	4352.5	4007.4	3710.2	3537.6
45°	4112.9	4026.6	3681.4	3374.6	3240.4
47.5°	3796.5	3719.8	3403.4	3087.0	2933.6
50°	3460.9	3393.8	3106.2	2789.8	2626.9
52.5°	3182.9	3077.4	2799.4	2483.1	2348.8
55°	2856.9	2770.7	2511.8	2214.6	2099.6
57.5°	2559.7	2473.5	2233.8	1955.8	1859.9
60°	2281.7	2157.1	1955.8	1716.1	1639.4
62.5°	1974.9	1879.1	1706.5	1505.2	1601.0
65°	1696.9	1601.0	1447.6	1476.4	1227.1
67.5°	1390.1	1342.2	1208.0	1073.8	1035.4
70°	1131.3	1073.8	1025.8	882.0	843.7
72.5°	901.2	843.7	776.6	699.9	671.1
75°	680.7	632.7	594.4	565.6	623.2
77.5°	469.8	450.6	421.8	393.1	383.5
80°	306.8	297.2	287.6	278.0	268.4
82.5°	182.2	182.2	182.2	182.2	182.2
85°	95.9	105.5	115.0	124.6	134.2
87.5°	57.5	57.5	67.1	76.7	86.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)