

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: P561164

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-81-96-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561164
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-12-4-LD4-1STD-35-UNV-81-96-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2617.0 lumens
Efficiency: N/A
Efficacy: 78.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

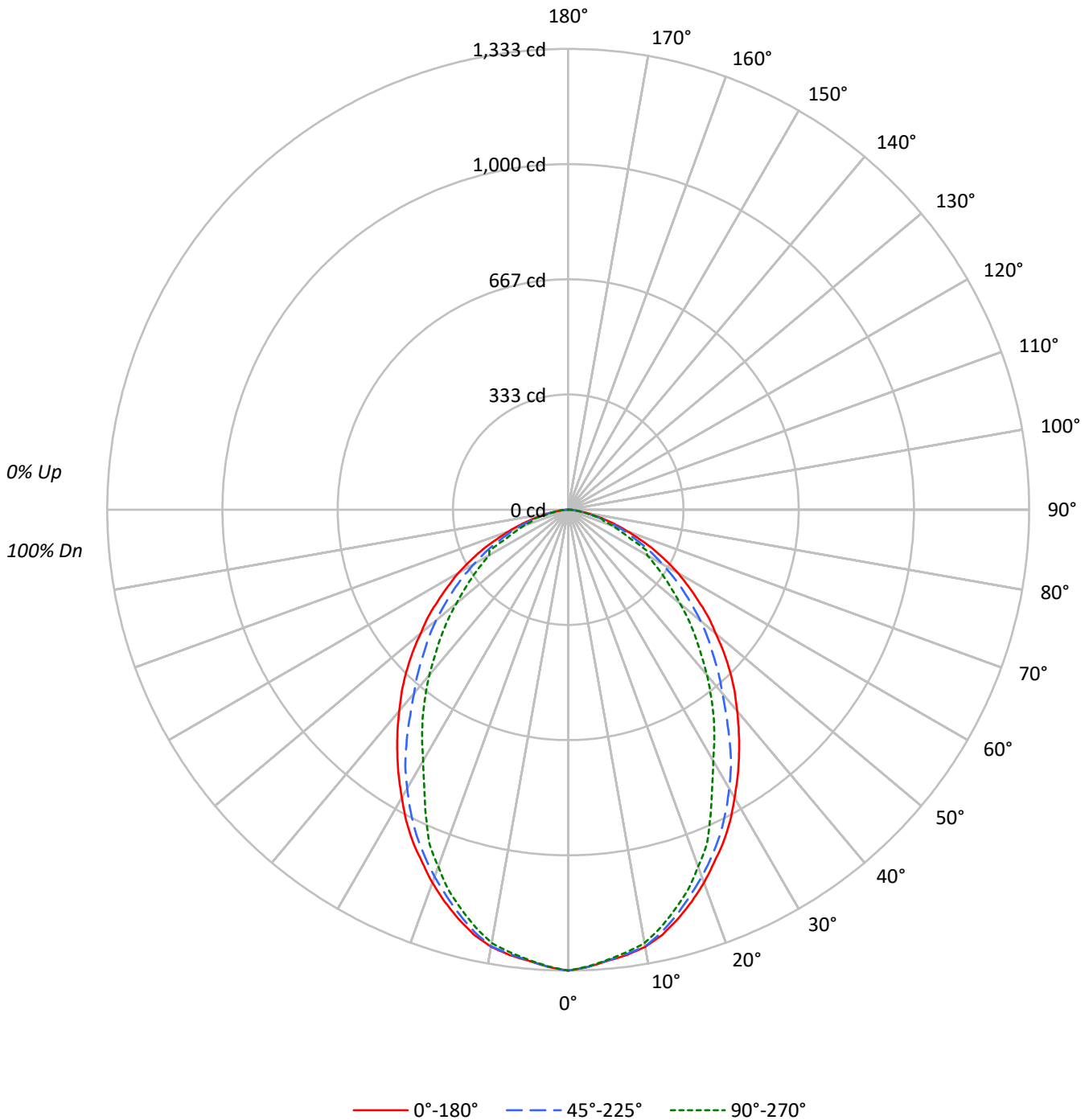
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	3587	3587	3587
5°	3538	3534	3530
10°	3508	3504	3478
15°	3413	3379	3332
20°	3288	3235	3147
25°	3153	3084	2892
30°	2988	2892	2605
35°	2830	2673	2410
40°	2669	2436	2193
45°	2516	2252	1982
50°	2329	2090	1768
55°	2155	1894	1583
60°	1974	1692	1418
65°	1737	1482	1256
70°	1431	1297	1067
75°	1137	993	1042
80°	764	716	669
85°	475	571	667

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2516 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	124.1	4.7
10°-20°	340.6	13.0
20°-30°	471.5	18.0
30°-40°	502.7	19.2
40°-50°	458.6	17.5
50°-60°	359.3	13.7
60°-70°	234.2	8.9
70°-80°	103.7	4.0
80°-90°	22.3	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°	936.1	35.8
0°-40°	1438.8	55.0
0°-60°	2256.8	86.2
0°-90°	2617.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2617.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1333	1333	1333	1333	1333	
5°	1310	1308	1308	1307	1307	124
15°	1225	1225	1213	1200	1196	344
25°	1062	1056	1039	1002	974	487
35°	862	855	814	752	734	539
45°	661	647	592	542	521	509
55°	459	445	404	356	338	412
65°	273	257	233	237	197	269
75°	109	102	96	91	100	117
85°	15	17	18	20	22	21
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1333.1	1333.1	1333.1	1333.1	1333.1
2.5°	1323.8	1323.8	1323.8	1322.3	1322.3
5°	1309.9	1308.4	1308.4	1306.9	1306.9
7.5°	1299.2	1297.6	1296.1	1294.5	1291.5
10°	1283.7	1283.7	1282.2	1274.5	1273.0
12.5°	1259.1	1257.6	1251.4	1240.6	1237.5
15°	1225.2	1225.2	1212.9	1200.5	1195.9
17.5°	1188.2	1186.7	1171.2	1158.9	1152.8
20°	1148.1	1145.0	1129.6	1109.6	1098.8
22.5°	1103.4	1103.4	1084.9	1058.7	1048.0
25°	1061.8	1055.7	1038.7	1001.7	974.0
27.5°	1014.1	1004.8	986.3	933.9	901.6
30°	961.7	957.0	930.8	863.0	838.4
32.5°	912.3	904.6	876.9	806.0	786.0
35°	861.5	855.3	813.7	752.1	733.6
37.5°	810.6	802.9	750.5	701.2	678.1
40°	759.8	750.5	693.5	648.8	624.2
42.5°	712.0	699.7	644.2	596.4	568.7
45°	661.1	647.3	591.8	542.5	520.9
47.5°	610.3	598.0	547.1	496.2	471.6
50°	556.3	545.6	499.3	448.5	422.3
52.5°	511.7	494.7	450.0	399.1	377.6
55°	459.3	445.4	403.8	356.0	337.5
57.5°	411.5	397.6	359.1	314.4	299.0
60°	366.8	346.8	314.4	275.9	263.5
62.5°	317.5	302.1	274.3	242.0	257.4
65°	272.8	257.4	232.7	237.3	197.3
67.5°	223.5	215.8	194.2	172.6	166.4
70°	181.9	172.6	164.9	141.8	135.6
72.5°	144.9	135.6	124.8	112.5	107.9
75°	109.4	101.7	95.5	90.9	100.2
77.5°	75.5	72.4	67.8	63.2	61.6
80°	49.3	47.8	46.2	44.7	43.2
82.5°	29.3	29.3	29.3	29.3	29.3
85°	15.4	17.0	18.5	20.0	21.6
87.5°	9.2	9.2	10.8	12.3	13.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)