

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: P560866

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-93-85-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560866
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-LD4-1HI-40-UNV-93-85-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3395.0 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

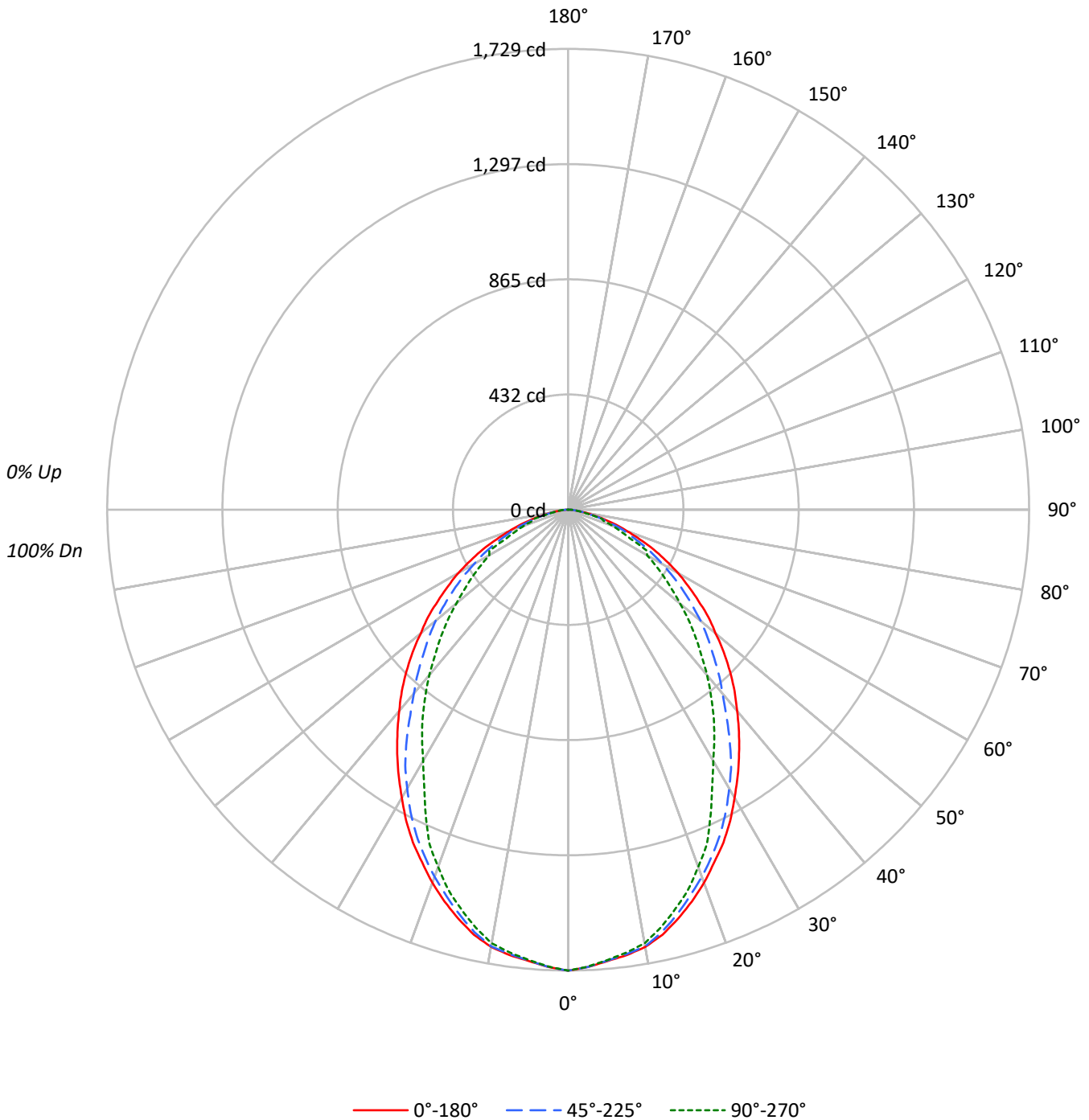
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	4654	4654	4654
5°	4591	4585	4580
10°	4551	4545	4512
15°	4428	4383	4322
20°	4265	4197	4082
25°	4090	4001	3752
30°	3876	3752	3379
35°	3671	3468	3126
40°	3462	3160	2844
45°	3264	2922	2572
50°	3021	2712	2293
55°	2795	2457	2054
60°	2561	2195	1840
65°	2253	1922	1629
70°	1856	1683	1384
75°	1475	1289	1352
80°	992	930	868
85°	618	741	865

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3264 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	161.0	4.7
10°-20°	441.8	13.0
20°-30°	611.6	18.0
30°-40°	652.2	19.2
40°-50°	595.0	17.5
50°-60°	466.1	13.7
60°-70°	303.8	8.9
70°-80°	134.6	4.0
80°-90°	28.9	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°	1214.4	35.8
0°-40°	1866.6	55.0
0°-60°	2927.7	86.2
0°-90°	3395.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3395.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1729	1729	1729	1729	1729	
5°	1699	1697	1697	1695	1695	161
15°	1589	1589	1573	1557	1551	447
25°	1378	1370	1348	1300	1264	632
35°	1118	1110	1056	976	952	699
45°	858	840	768	704	676	661
55°	596	578	524	462	438	534
65°	354	334	302	308	256	349
75°	142	132	124	118	130	152
85°	20	22	24	26	28	28
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1729.4	1729.4	1729.4	1729.4	1729.4
2.5°	1717.4	1717.4	1717.4	1715.4	1715.4
5°	1699.4	1697.4	1697.4	1695.4	1695.4
7.5°	1685.4	1683.4	1681.4	1679.4	1675.4
10°	1665.4	1665.4	1663.4	1653.4	1651.4
12.5°	1633.4	1631.4	1623.4	1609.4	1605.4
15°	1589.4	1589.4	1573.4	1557.4	1551.4
17.5°	1541.4	1539.4	1519.4	1503.5	1495.5
20°	1489.5	1485.5	1465.5	1439.5	1425.5
22.5°	1431.5	1431.5	1407.5	1373.5	1359.5
25°	1377.5	1369.5	1347.5	1299.5	1263.5
27.5°	1315.5	1303.5	1279.5	1211.6	1169.6
30°	1247.5	1241.5	1207.6	1119.6	1087.6
32.5°	1183.6	1173.6	1137.6	1045.6	1019.6
35°	1117.6	1109.6	1055.6	975.6	951.7
37.5°	1051.6	1041.6	973.6	909.7	879.7
40°	985.6	973.6	899.7	841.7	809.7
42.5°	923.7	907.7	835.7	773.7	737.7
45°	857.7	839.7	767.7	703.7	675.8
47.5°	791.7	775.7	709.7	643.8	611.8
50°	721.7	707.7	647.8	581.8	547.8
52.5°	663.8	641.8	583.8	517.8	489.8
55°	595.8	577.8	523.8	461.8	437.8
57.5°	533.8	515.8	465.8	407.9	387.9
60°	475.8	449.8	407.9	357.9	341.9
62.5°	411.8	391.9	355.9	313.9	333.9
65°	353.9	333.9	301.9	307.9	255.9
67.5°	289.9	279.9	251.9	223.9	215.9
70°	235.9	223.9	213.9	183.9	175.9
72.5°	187.9	175.9	161.9	145.9	139.9
75°	141.9	132.0	124.0	118.0	130.0
77.5°	98.0	94.0	88.0	82.0	80.0
80°	64.0	62.0	60.0	58.0	56.0
82.5°	38.0	38.0	38.0	38.0	38.0
85°	20.0	22.0	24.0	26.0	28.0
87.5°	12.0	12.0	14.0	16.0	18.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)