

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: P590161

Luminaire Tested: FSR-24-2-LD4-2HI-35-UNV-93-88-EDD

Issue Date: 12/8/2021

Test Information

Test Method: LM-79-2019
Report Number: P590161
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)
Test Lab: INNOVATION CENTER
Issue Date: 12/8/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: FSR-24-2-LD4-2HI-35-UNV-93-88-EDD
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4050.0 lumens
Efficiency: N/A
Efficacy: 93.7 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

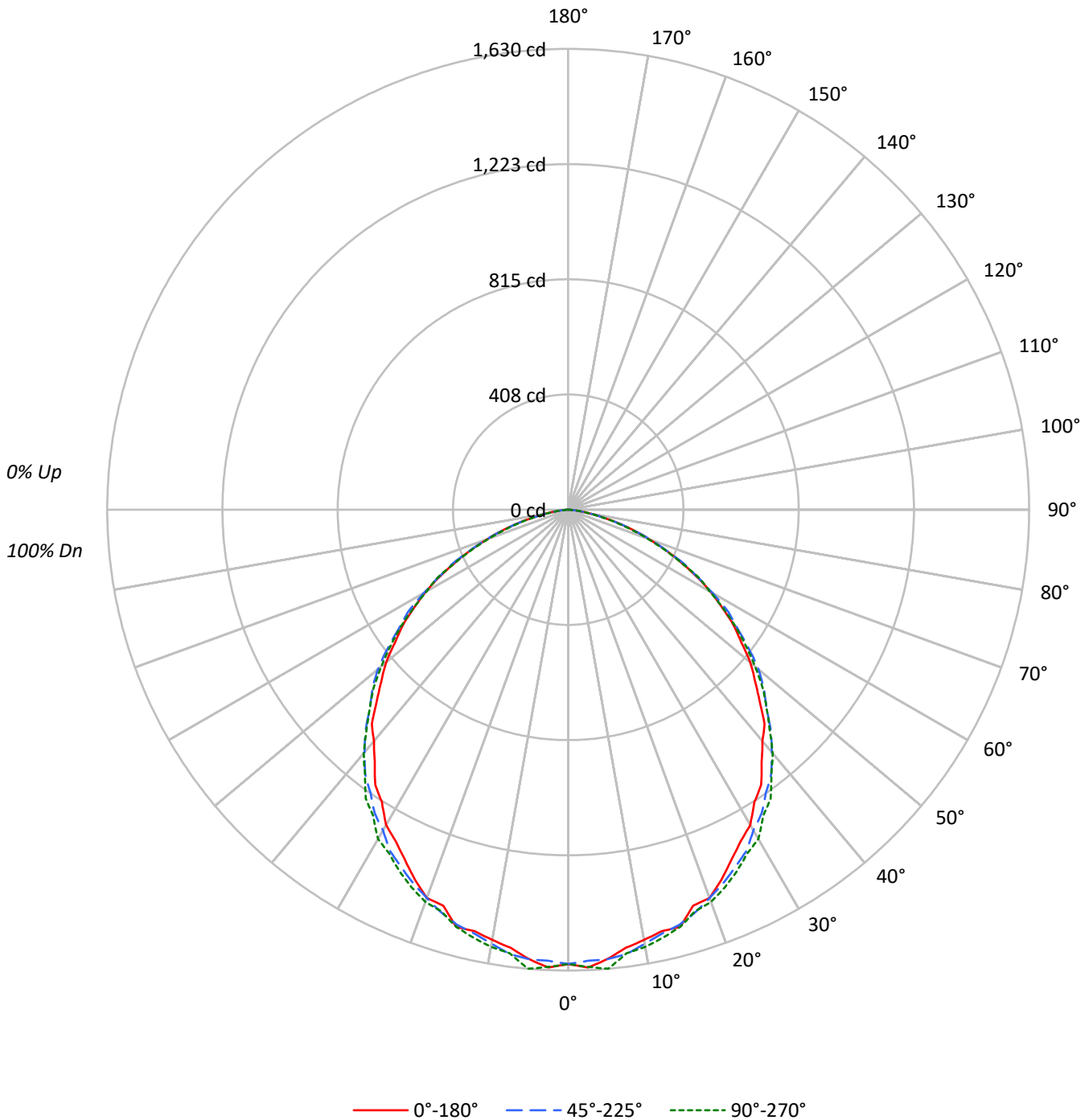
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4324	4324	4324
5°	4310	4311	4403
10°	4223	4259	4289
15°	4256	4233	4257
20°	4184	4184	4229
25°	4055	4144	4190
30°	4000	4070	4178
35°	3906	4008	4098
40°	3753	3934	3952
45°	3640	3769	3775
50°	3520	3679	3609
55°	3354	3420	3395
60°	3137	3168	3111
65°	2797	2868	2777
70°	2400	2408	2341
75°	1901	1896	1823
80°	1274	1238	1190
85°	692	685	639

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 3867 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.2	3.7
10°-20°	428.4	10.6
20°-30°	641.8	15.8
30°-40°	760.7	18.8
40°-50°	762.1	18.8
50°-60°	646.9	16.0
60°-70°	436.1	10.8
70°-80°	191.6	4.7
80°-90°	31.1	0.8
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°	1221.4	30.2
0°-40°	1982.1	48.9
0°-60°	3391.1	83.7
0°-90°	4050.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4050.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1607	1607	1607	1607	1607	
5°	1596	1592	1596	1591	1630	150
15°	1528	1510	1519	1527	1528	426
25°	1366	1373	1396	1414	1411	631
35°	1189	1192	1220	1248	1247	738
45°	956	974	990	1016	992	740
55°	715	710	729	724	724	636
65°	439	433	450	433	436	437
75°	183	179	182	170	175	196
85°	22	22	22	22	21	32
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1606.9	1606.9	1606.9	1606.9	1606.9
2.5°	1620.8	1608.6	1597.2	1610.5	1618.6
5°	1595.5	1591.8	1596.1	1591.4	1629.8
7.5°	1562.7	1577.1	1585.4	1580.2	1582.5
10°	1545.3	1540.3	1558.8	1571.7	1569.8
12.5°	1526.6	1534.1	1535.1	1549.1	1550.3
15°	1527.7	1510.0	1519.4	1527.3	1527.9
17.5°	1468.3	1487.4	1493.9	1511.9	1489.5
20°	1461.1	1447.2	1461.1	1479.5	1476.6
22.5°	1416.5	1400.9	1430.8	1447.2	1446.1
25°	1365.8	1373.3	1395.7	1414.0	1411.1
27.5°	1321.4	1330.2	1362.1	1387.2	1371.0
30°	1287.2	1282.9	1309.8	1332.2	1344.7
32.5°	1226.0	1241.8	1273.3	1295.5	1283.7
35°	1188.9	1192.4	1220.0	1248.2	1247.4
37.5°	1123.9	1140.3	1179.1	1187.0	1179.7
40°	1068.5	1084.9	1120.0	1128.5	1125.0
42.5°	1027.7	1030.6	1060.6	1070.4	1054.8
45°	956.5	974.3	990.5	1016.0	992.0
47.5°	895.9	904.2	939.1	945.9	933.2
50°	840.9	843.8	878.9	870.4	862.1
52.5°	771.8	784.1	803.8	802.1	792.4
55°	715.0	710.2	728.9	723.9	723.7
57.5°	646.7	655.0	670.4	662.5	649.8
60°	582.8	583.0	588.6	579.7	578.0
62.5°	511.6	514.1	515.4	504.4	522.2
65°	439.2	433.4	450.4	433.2	436.1
67.5°	372.6	375.5	373.9	363.1	367.2
70°	305.0	308.7	306.0	293.8	297.5
72.5°	243.2	238.6	241.5	226.2	233.2
75°	182.8	179.1	182.4	169.5	175.3
77.5°	124.5	127.4	125.3	118.5	122.4
80°	82.2	79.9	79.9	75.9	76.8
82.5°	47.9	45.6	45.0	43.8	45.6
85°	22.4	21.8	22.2	21.6	20.7
87.5°	8.1	8.3	8.3	7.9	7.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)