

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: P560802

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-93-85-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560802
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-35-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 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3348.0 lumens
Efficiency: N/A
Efficacy: 77.5 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

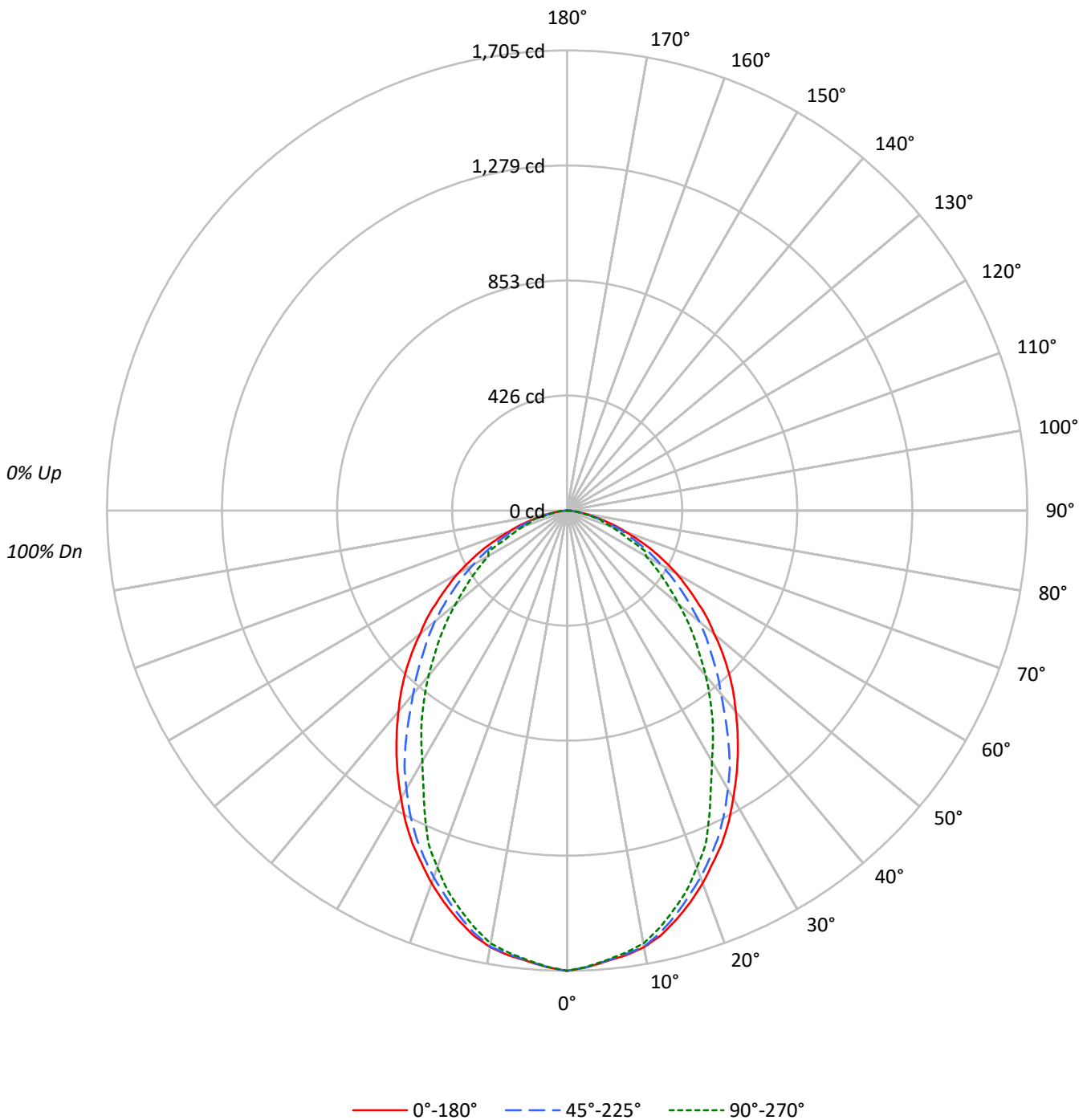
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	4589	4589	4589
5°	4527	4522	4516
10°	4488	4482	4450
15°	4367	4323	4262
20°	4206	4139	4025
25°	4033	3946	3700
30°	3823	3700	3333
35°	3620	3420	3083
40°	3414	3117	2805
45°	3219	2881	2536
50°	2979	2674	2262
55°	2756	2424	2026
60°	2525	2165	1814
65°	2222	1896	1607
70°	1830	1660	1365
75°	1456	1271	1333
80°	978	916	855
85°	608	732	852

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3219 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	158.8	4.7
10°-20°	435.7	13.0
20°-30°	603.2	18.0
30°-40°	643.2	19.2
40°-50°	586.7	17.5
50°-60°	459.7	13.7
60°-70°	299.6	8.9
70°-80°	132.7	4.0
80°-90°	28.5	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°	1197.6	35.8
0°-40°	1840.8	55.0
0°-60°	2887.2	86.2
0°-90°	3348.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3348.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1705	1705	1705	1705	1705	
5°	1676	1674	1674	1672	1672	159
15°	1567	1567	1552	1536	1530	441
25°	1358	1350	1329	1282	1246	624
35°	1102	1094	1041	962	938	689
45°	846	828	757	694	666	652
55°	588	570	517	455	432	527
65°	349	329	298	304	252	344
75°	140	130	122	116	128	150
85°	20	22	24	26	28	27
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1705.4	1705.4	1705.4	1705.4	1705.4
2.5°	1693.6	1693.6	1693.6	1691.6	1691.6
5°	1675.9	1673.9	1673.9	1671.9	1671.9
7.5°	1662.1	1660.1	1658.1	1656.1	1652.2
10°	1642.3	1642.3	1640.4	1630.5	1628.5
12.5°	1610.8	1608.8	1600.9	1587.1	1583.2
15°	1567.4	1567.4	1551.6	1535.9	1530.0
17.5°	1520.1	1518.1	1498.4	1482.6	1474.8
20°	1468.8	1464.9	1445.2	1419.5	1405.7
22.5°	1411.7	1411.7	1388.0	1354.5	1340.7
25°	1358.4	1350.5	1328.9	1281.5	1246.0
27.5°	1297.3	1285.5	1261.8	1194.8	1153.4
30°	1230.3	1224.4	1190.8	1104.1	1072.5
32.5°	1167.2	1157.3	1121.8	1031.1	1005.5
35°	1102.1	1094.2	1041.0	962.1	938.5
37.5°	1037.1	1027.2	960.2	897.1	867.5
40°	972.0	960.2	887.2	830.0	798.5
42.5°	910.9	895.1	824.1	763.0	727.5
45°	845.8	828.1	757.1	694.0	666.4
47.5°	780.8	765.0	699.9	634.9	603.3
50°	711.7	697.9	638.8	573.7	540.2
52.5°	654.6	632.9	575.7	510.6	483.0
55°	587.5	569.8	516.6	455.4	431.8
57.5°	526.4	508.7	459.4	402.2	382.5
60°	469.2	443.6	402.2	352.9	337.1
62.5°	406.1	386.4	350.9	309.5	329.3
65°	349.0	329.3	297.7	303.6	252.4
67.5°	285.9	276.0	248.4	220.8	212.9
70°	232.6	220.8	211.0	181.4	173.5
72.5°	185.3	173.5	159.7	143.9	138.0
75°	140.0	130.1	122.2	116.3	128.2
77.5°	96.6	92.7	86.8	80.8	78.9
80°	63.1	61.1	59.1	57.2	55.2
82.5°	37.5	37.5	37.5	37.5	37.5
85°	19.7	21.7	23.7	25.6	27.6
87.5°	11.8	11.8	13.8	15.8	17.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)