

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: P561990

Luminaire Tested: FSR-24-4-LD4-1HI-35-UNV-81-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561990
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-LD4-1HI-35-UNV-81-87-EDD-90
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

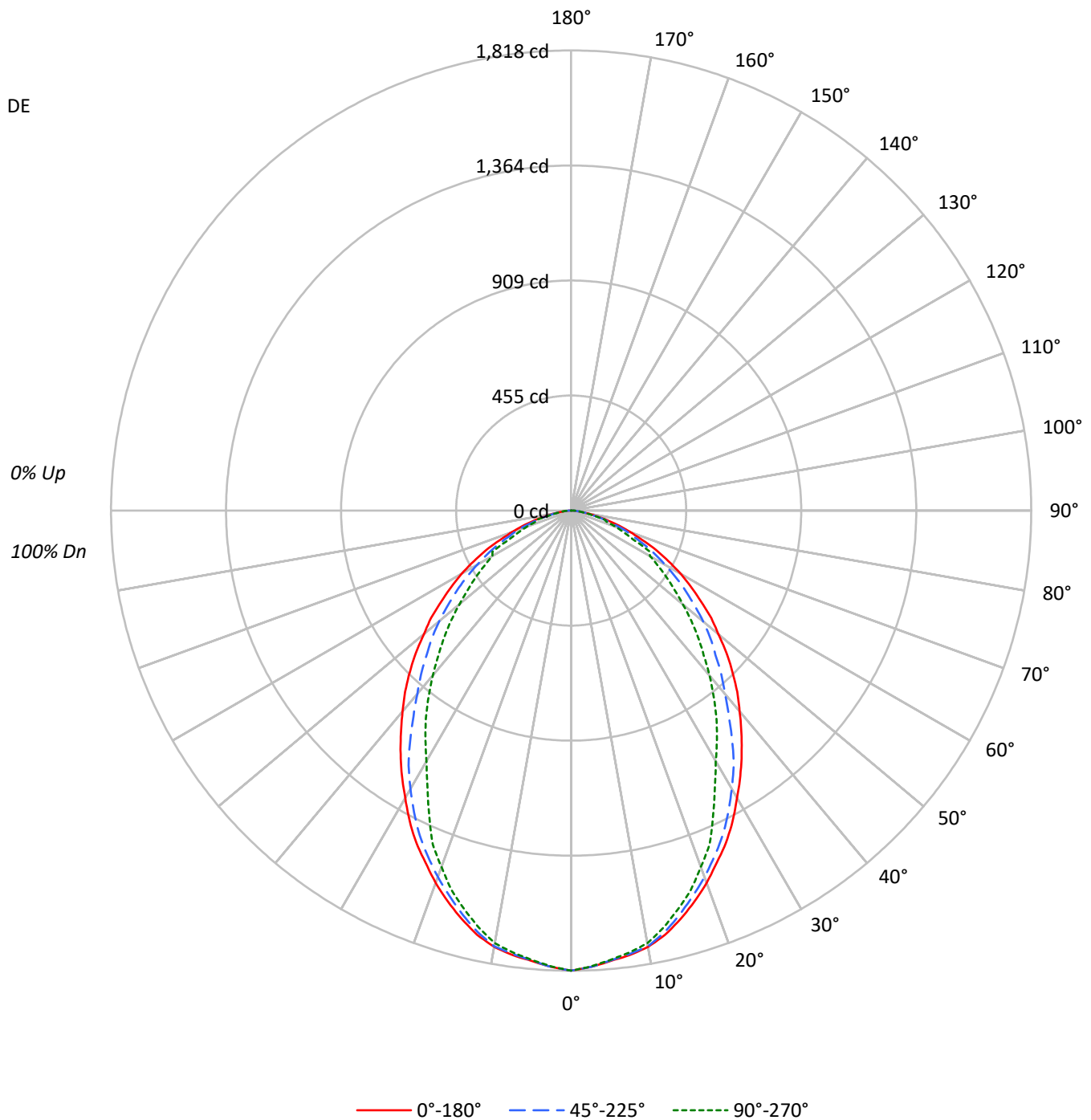
Lumens per Lamp: N/A
Luminaire Lumens: 3568.0 lumens
Efficiency: N/A
Efficacy: 82.6 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 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																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2445	2445	2445
5°	2412	2409	2407
10°	2391	2388	2371
15°	2327	2303	2271
20°	2241	2205	2145
25°	2149	2102	1971
30°	2037	1972	1776
35°	1929	1822	1643
40°	1819	1661	1495
45°	1715	1535	1351
50°	1588	1425	1205
55°	1469	1291	1080
60°	1346	1153	967
65°	1184	1010	856
70°	975	884	727
75°	776	677	710
80°	521	488	456
85°	324	389	454

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1715 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.2	4.7
10°-20°	464.3	13.0
20°-30°	642.8	18.0
30°-40°	685.4	19.2
40°-50°	625.3	17.5
50°-60°	489.9	13.7
60°-70°	319.3	8.9
70°-80°	141.5	4.0
80°-90°	30.4	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°	1276.3	35.8
0°-40°	1961.7	55.0
0°-60°	3076.9	86.2
0°-90°	3568.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3568.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1818	1818	1818	1818	1818	
5°	1786	1784	1784	1782	1782	170
15°	1670	1670	1654	1637	1630	470
25°	1448	1439	1416	1366	1328	665
35°	1174	1166	1109	1025	1000	734
45°	901	882	807	740	710	694
55°	626	607	550	485	460	562
65°	372	351	317	324	269	367
75°	149	139	130	124	137	160
85°	21	23	25	27	29	29
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1817.5	1817.5	1817.5	1817.5	1817.5
2.5°	1804.9	1804.9	1804.9	1802.8	1802.8
5°	1786.0	1783.9	1783.9	1781.8	1781.8
7.5°	1771.3	1769.2	1767.1	1765.0	1760.8
10°	1750.3	1750.3	1748.2	1737.6	1735.5
12.5°	1716.6	1714.5	1706.1	1691.4	1687.2
15°	1670.4	1670.4	1653.6	1636.8	1630.5
17.5°	1620.0	1617.9	1596.9	1580.1	1571.7
20°	1565.4	1561.2	1540.1	1512.8	1498.1
22.5°	1504.4	1504.4	1479.2	1443.5	1428.8
25°	1447.7	1439.3	1416.2	1365.7	1327.9
27.5°	1382.6	1369.9	1344.7	1273.3	1229.2
30°	1311.1	1304.8	1269.1	1176.6	1143.0
32.5°	1243.9	1233.4	1195.6	1098.9	1071.6
35°	1174.5	1166.1	1109.4	1025.4	1000.1
37.5°	1105.2	1094.7	1023.3	956.0	924.5
40°	1035.9	1023.3	945.5	884.6	851.0
42.5°	970.7	953.9	878.3	813.1	775.3
45°	901.4	882.5	806.8	739.6	710.2
47.5°	832.1	815.2	745.9	676.6	643.0
50°	758.5	743.8	680.8	611.4	575.7
52.5°	697.6	674.5	613.5	544.2	514.8
55°	626.1	607.2	550.5	485.4	460.2
57.5°	561.0	542.1	489.6	428.6	407.6
60°	500.1	472.8	428.6	376.1	359.3
62.5°	432.8	411.8	374.0	329.9	350.9
65°	371.9	350.9	317.3	323.6	268.9
67.5°	304.7	294.2	264.7	235.3	226.9
70°	247.9	235.3	224.8	193.3	184.9
72.5°	197.5	184.9	170.2	153.4	147.1
75°	149.2	138.7	130.3	124.0	136.6
77.5°	103.0	98.8	92.5	86.1	84.0
80°	67.2	65.1	63.0	60.9	58.8
82.5°	39.9	39.9	39.9	39.9	39.9
85°	21.0	23.1	25.2	27.3	29.4
87.5°	12.6	12.6	14.7	16.8	18.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)