

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: P561562

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-82-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561562  
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-LD4-2LO-35-UNV-82-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

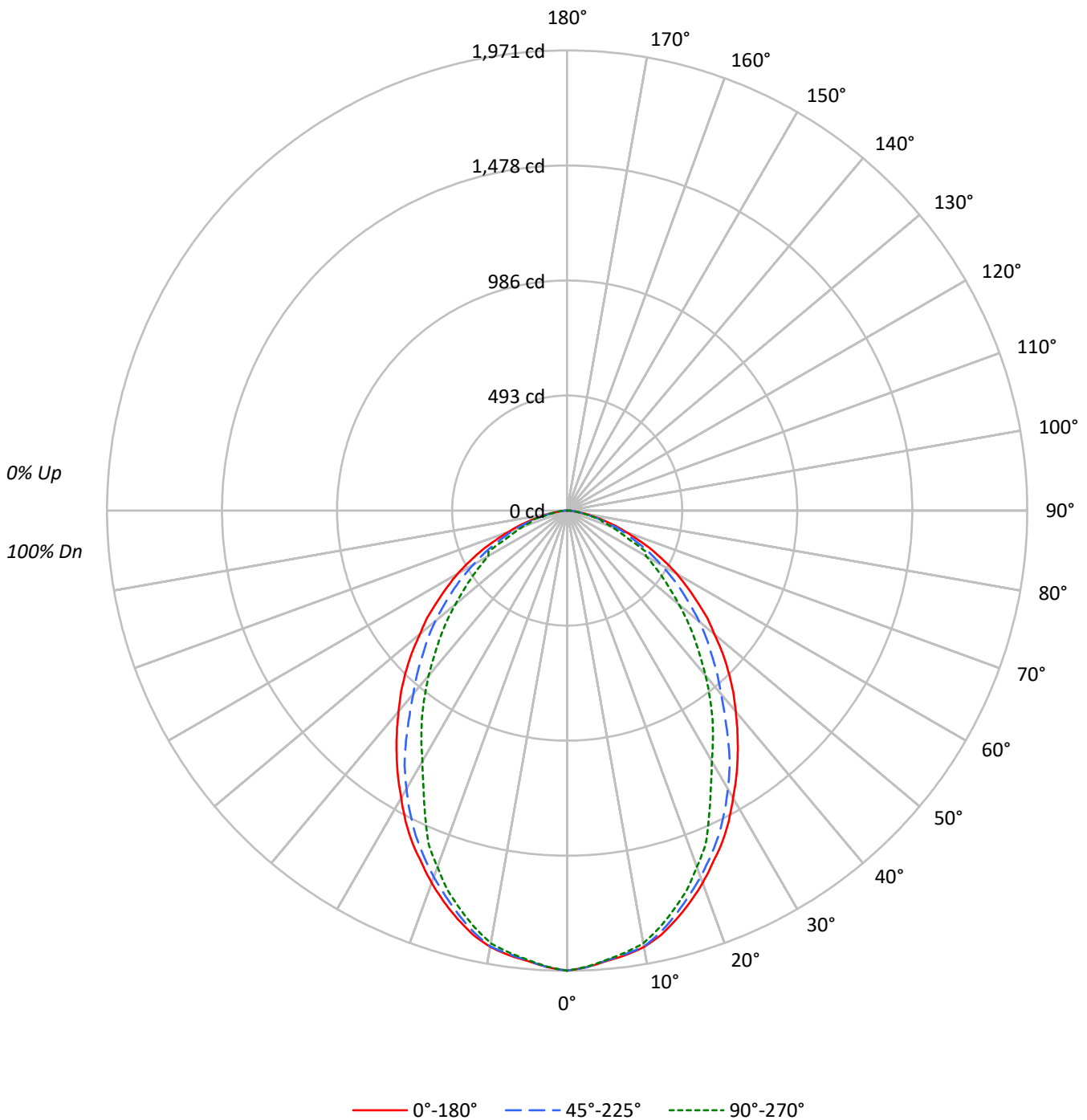
Lumens per Lamp: N/A  
Luminaire Lumens: 3869.0 lumens  
Efficiency: N/A  
Efficacy: 82.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5303	5303	5303
5°	5231	5225	5219
10°	5186	5180	5143
15°	5046	4995	4925
20°	4861	4783	4652
25°	4661	4559	4275
30°	4418	4276	3851
35°	4184	3952	3563
40°	3946	3602	3242
45°	3720	3330	2931
50°	3443	3090	2614
55°	3186	2800	2341
60°	2919	2502	2097
65°	2568	2190	1857
70°	2116	1918	1578
75°	1682	1469	1540
80°	1130	1060	989
85°	704	843	985

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3720 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	183.5	4.7
10°-20°	503.5	13.0
20°-30°	697.0	18.0
30°-40°	743.2	19.2
40°-50°	678.0	17.5
50°-60°	531.2	13.7
60°-70°	346.2	8.9
70°-80°	153.4	4.0
80°-90°	32.9	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°	1384.0	35.8
0°-40°	2127.2	55.0
0°-60°	3336.5	86.2
0°-90°	3869.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3869.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1971	1971	1971	1971	1971	
5°	1937	1934	1934	1932	1932	184
15°	1811	1811	1793	1775	1768	509
25°	1570	1561	1536	1481	1440	721
35°	1274	1264	1203	1112	1084	796
45°	977	957	875	802	770	753
55°	679	658	597	526	499	609
65°	403	380	344	351	292	397
75°	162	150	141	134	148	173
85°	23	25	27	30	32	32
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1970.8	1970.8	1970.8	1970.8	1970.8
2.5°	1957.1	1957.1	1957.1	1954.9	1954.9
5°	1936.6	1934.4	1934.4	1932.1	1932.1
7.5°	1920.7	1918.4	1916.1	1913.9	1909.3
10°	1897.9	1897.9	1895.6	1884.2	1882.0
12.5°	1861.5	1859.2	1850.1	1834.1	1829.6
15°	1811.3	1811.3	1793.1	1774.9	1768.0
17.5°	1756.6	1754.4	1731.6	1713.4	1704.2
20°	1697.4	1692.9	1670.1	1640.4	1624.5
22.5°	1631.3	1631.3	1604.0	1565.3	1549.3
25°	1569.8	1560.7	1535.6	1481.0	1439.9
27.5°	1499.2	1485.5	1458.2	1380.7	1332.9
30°	1421.7	1414.9	1376.2	1275.9	1239.5
32.5°	1348.8	1337.4	1296.4	1191.6	1162.0
35°	1273.6	1264.5	1203.0	1111.9	1084.5
37.5°	1198.4	1187.0	1109.6	1036.7	1002.5
40°	1123.3	1109.6	1025.3	959.2	922.8
42.5°	1052.6	1034.4	952.4	881.7	840.7
45°	977.4	956.9	874.9	802.0	770.1
47.5°	902.2	884.0	808.8	733.6	697.2
50°	822.5	806.6	738.2	663.0	624.3
52.5°	756.4	731.4	665.3	590.1	558.2
55°	679.0	658.5	596.9	526.3	499.0
57.5°	608.3	587.8	530.9	464.8	442.0
60°	542.3	512.6	464.8	407.8	389.6
62.5°	469.4	446.6	405.6	357.7	380.5
65°	403.3	380.5	344.0	350.9	291.6
67.5°	330.4	319.0	287.1	255.2	246.1
70°	268.9	255.2	243.8	209.6	200.5
72.5°	214.2	200.5	184.6	166.3	159.5
75°	161.8	150.4	141.3	134.4	148.1
77.5°	111.6	107.1	100.2	93.4	91.1
80°	72.9	70.6	68.4	66.1	63.8
82.5°	43.3	43.3	43.3	43.3	43.3
85°	22.8	25.1	27.3	29.6	31.9
87.5°	13.7	13.7	15.9	18.2	20.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)