

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: P560835

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-81-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560835  
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-81-85-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

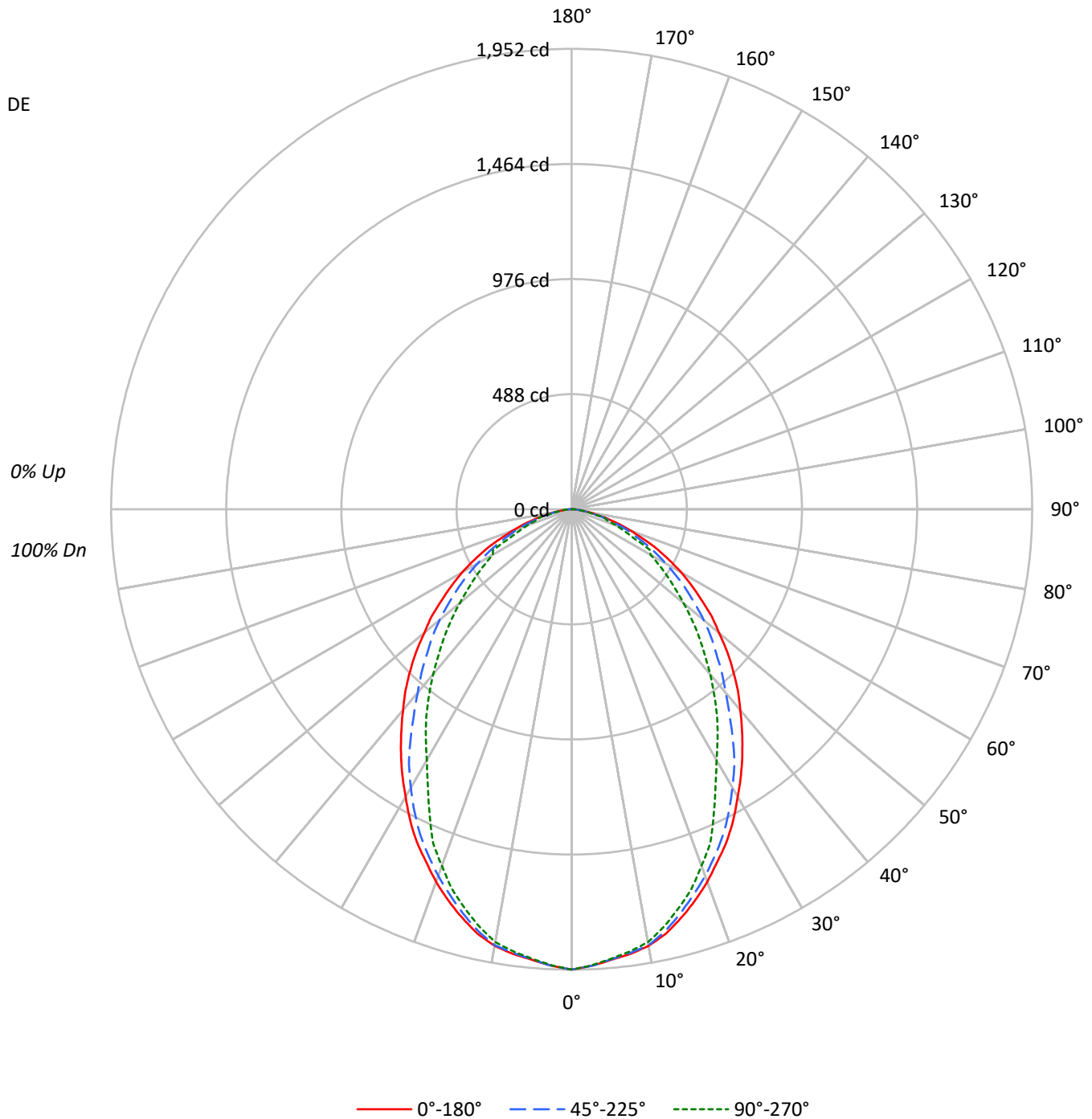
Lumens per Lamp: N/A  
Luminaire Lumens: 3831.0 lumens  
Efficiency: N/A  
Efficacy: 88.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5251	5251	5251
5°	5180	5174	5168
10°	5135	5129	5092
15°	4997	4946	4877
20°	4813	4736	4606
25°	4615	4515	4233
30°	4374	4234	3814
35°	4143	3913	3528
40°	3907	3566	3210
45°	3683	3297	2902
50°	3409	3060	2588
55°	3154	2773	2318
60°	2890	2477	2076
65°	2543	2169	1839
70°	2094	1899	1562
75°	1666	1455	1524
80°	1119	1049	979
85°	698	837	976

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3683 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	181.7	4.7
10°-20°	498.5	13.0
20°-30°	690.2	18.0
30°-40°	735.9	19.2
40°-50°	671.4	17.5
50°-60°	526.0	13.7
60°-70°	342.8	8.9
70°-80°	151.9	4.0
80°-90°	32.6	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°	1370.4	35.8
0°-40°	2106.3	55.0
0°-60°	3303.7	86.2
0°-90°	3831.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3831.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1952	1952	1952	1952	1952	
5°	1918	1915	1915	1913	1913	182
15°	1794	1794	1776	1757	1751	504
25°	1554	1545	1521	1466	1426	714
35°	1261	1252	1191	1101	1074	788
45°	968	948	866	794	762	746
55°	672	652	591	521	494	603
65°	399	377	341	347	289	394
75°	160	149	140	133	147	172
85°	23	25	27	29	32	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1951.5	1951.5	1951.5	1951.5	1951.5
2.5°	1937.9	1937.9	1937.9	1935.7	1935.7
5°	1917.6	1915.4	1915.4	1913.1	1913.1
7.5°	1901.8	1899.6	1897.3	1895.1	1890.5
10°	1879.3	1879.3	1877.0	1865.7	1863.5
12.5°	1843.2	1840.9	1831.9	1816.1	1811.6
15°	1793.5	1793.5	1775.5	1757.4	1750.7
17.5°	1739.4	1737.1	1714.6	1696.5	1687.5
20°	1680.7	1676.2	1653.7	1624.3	1608.5
22.5°	1615.3	1615.3	1588.2	1549.9	1534.1
25°	1554.4	1545.4	1520.6	1466.4	1425.8
27.5°	1484.5	1470.9	1443.9	1367.2	1319.8
30°	1407.8	1401.0	1362.6	1263.4	1227.3
32.5°	1335.6	1324.3	1283.7	1179.9	1150.6
35°	1261.1	1252.1	1191.2	1100.9	1073.9
37.5°	1186.7	1175.4	1098.7	1026.5	992.7
40°	1112.2	1098.7	1015.2	949.8	913.7
42.5°	1042.3	1024.2	943.0	873.1	832.5
45°	967.8	947.5	866.3	794.1	762.5
47.5°	893.4	875.3	800.9	726.4	690.3
50°	814.4	798.6	731.0	656.5	618.2
52.5°	749.0	724.2	658.8	584.3	552.7
55°	672.3	652.0	591.1	521.1	494.1
57.5°	602.4	582.1	525.7	460.2	437.7
60°	536.9	507.6	460.2	403.8	385.8
62.5°	464.7	442.2	401.6	354.2	376.8
65°	399.3	376.8	340.7	347.4	288.8
67.5°	327.1	315.8	284.3	252.7	243.7
70°	266.2	252.7	241.4	207.6	198.5
72.5°	212.1	198.5	182.7	164.7	157.9
75°	160.2	148.9	139.9	133.1	146.6
77.5°	110.5	106.0	99.3	92.5	90.2
80°	72.2	69.9	67.7	65.4	63.2
82.5°	42.9	42.9	42.9	42.9	42.9
85°	22.6	24.8	27.1	29.3	31.6
87.5°	13.5	13.5	15.8	18.0	20.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)