

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: P562004

Luminaire Tested: FSR-24-4-LD4-1HI-35-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562004  
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-82-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

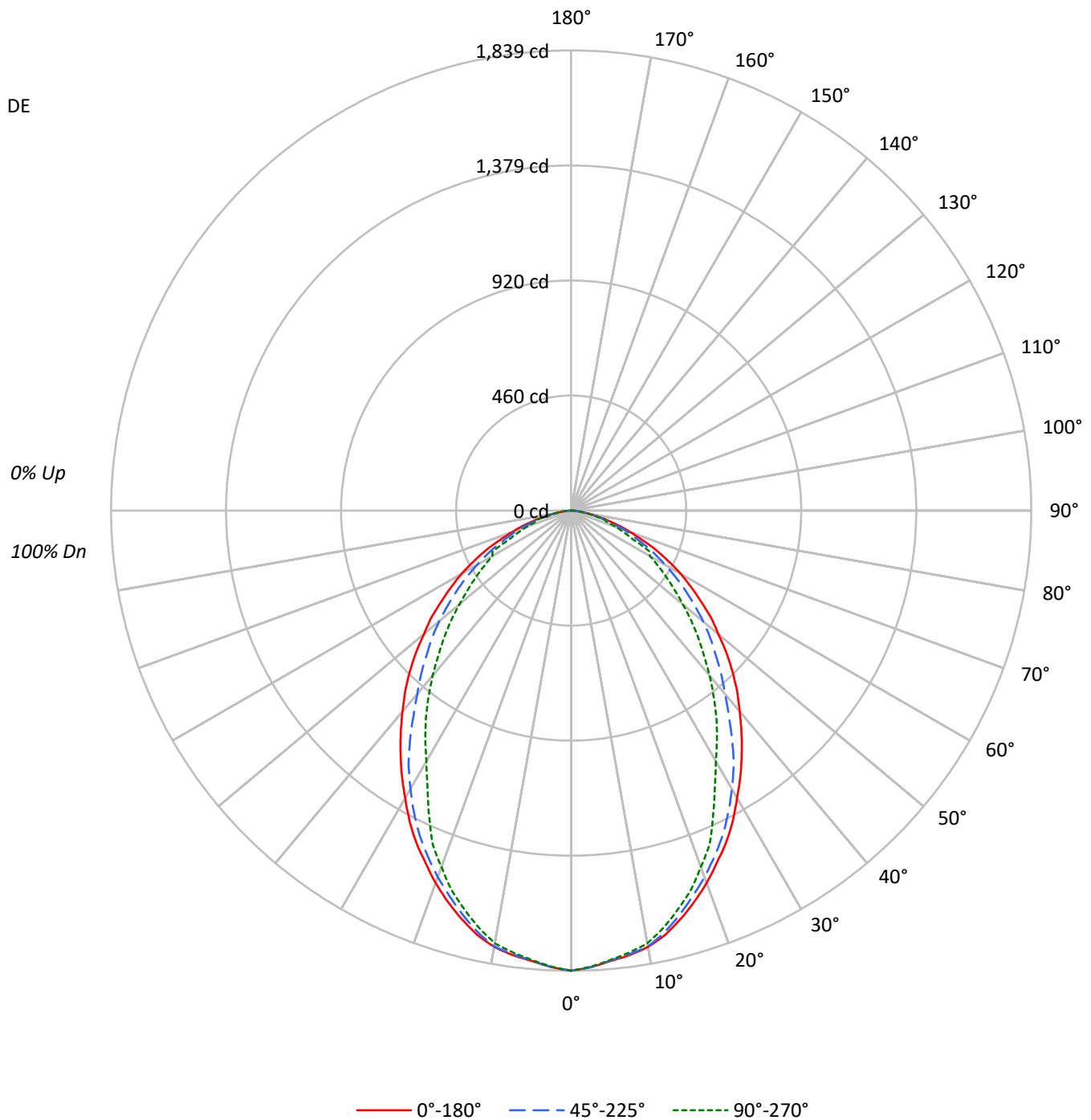
Lumens per Lamp: N/A  
Luminaire Lumens: 3610.0 lumens  
Efficiency: N/A  
Efficacy: 83.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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									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°	2474	2474	2474
5°	2441	2438	2435
10°	2419	2416	2399
15°	2354	2331	2298
20°	2268	2231	2170
25°	2174	2127	1995
30°	2061	1995	1797
35°	1952	1844	1662
40°	1841	1680	1512
45°	1735	1553	1367
50°	1606	1442	1219
55°	1486	1307	1092
60°	1362	1167	978
65°	1198	1022	866
70°	987	895	736
75°	784	685	718
80°	527	494	461
85°	329	394	460

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1735 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.2	4.7
10°-20°	469.8	13.0
20°-30°	650.4	18.0
30°-40°	693.5	19.2
40°-50°	632.7	17.5
50°-60°	495.6	13.7
60°-70°	323.0	8.9
70°-80°	143.1	4.0
80°-90°	30.7	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°	1291.3	35.8
0°-40°	1984.8	55.0
0°-60°	3113.1	86.2
0°-90°	3610.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3610.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1839	1839	1839	1839	1839	
5°	1807	1805	1805	1803	1803	172
15°	1690	1690	1673	1656	1650	475
25°	1465	1456	1433	1382	1344	672
35°	1188	1180	1122	1037	1012	743
45°	912	893	816	748	718	703
55°	634	614	557	491	466	568
65°	376	355	321	327	272	371
75°	151	140	132	125	138	162
85°	21	23	26	28	30	30
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1838.9	1838.9	1838.9	1838.9	1838.9
2.5°	1826.1	1826.1	1826.1	1824.0	1824.0
5°	1807.0	1804.9	1804.9	1802.7	1802.7
7.5°	1792.1	1790.0	1787.9	1785.7	1781.5
10°	1770.9	1770.9	1768.7	1758.1	1756.0
12.5°	1736.8	1734.7	1726.2	1711.3	1707.1
15°	1690.1	1690.1	1673.1	1656.1	1649.7
17.5°	1639.1	1636.9	1615.7	1598.7	1590.2
20°	1583.8	1579.5	1558.3	1530.6	1515.8
22.5°	1522.1	1522.1	1496.6	1460.5	1445.6
25°	1464.7	1456.2	1432.8	1381.8	1343.6
27.5°	1398.8	1386.1	1360.6	1288.3	1243.6
30°	1326.5	1320.2	1284.0	1190.5	1156.5
32.5°	1258.5	1247.9	1209.6	1111.8	1084.2
35°	1188.4	1179.9	1122.5	1037.4	1011.9
37.5°	1118.2	1107.6	1035.3	967.3	935.4
40°	1048.1	1035.3	956.6	895.0	861.0
42.5°	982.2	965.1	888.6	822.7	784.4
45°	912.0	892.9	816.3	748.3	718.5
47.5°	841.8	824.8	754.7	684.5	650.5
50°	767.4	752.6	688.8	618.6	582.5
52.5°	705.8	682.4	620.8	550.6	520.8
55°	633.5	614.4	557.0	491.1	465.6
57.5°	567.6	548.5	495.3	433.7	412.4
60°	506.0	478.3	433.7	380.5	363.5
62.5°	437.9	416.7	378.4	333.8	355.0
65°	376.3	355.0	321.0	327.4	272.1
67.5°	308.3	297.6	267.9	238.1	229.6
70°	250.9	238.1	227.5	195.6	187.1
72.5°	199.8	187.1	172.2	155.2	148.8
75°	150.9	140.3	131.8	125.4	138.2
77.5°	104.2	99.9	93.5	87.2	85.0
80°	68.0	65.9	63.8	61.7	59.5
82.5°	40.4	40.4	40.4	40.4	40.4
85°	21.3	23.4	25.5	27.6	29.8
87.5°	12.8	12.8	14.9	17.0	19.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)