

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: P590628

Luminaire Tested: FSR-24-2-LD4-3STD-35-UNV-81-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590628  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-3STD-35-UNV-81-97-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

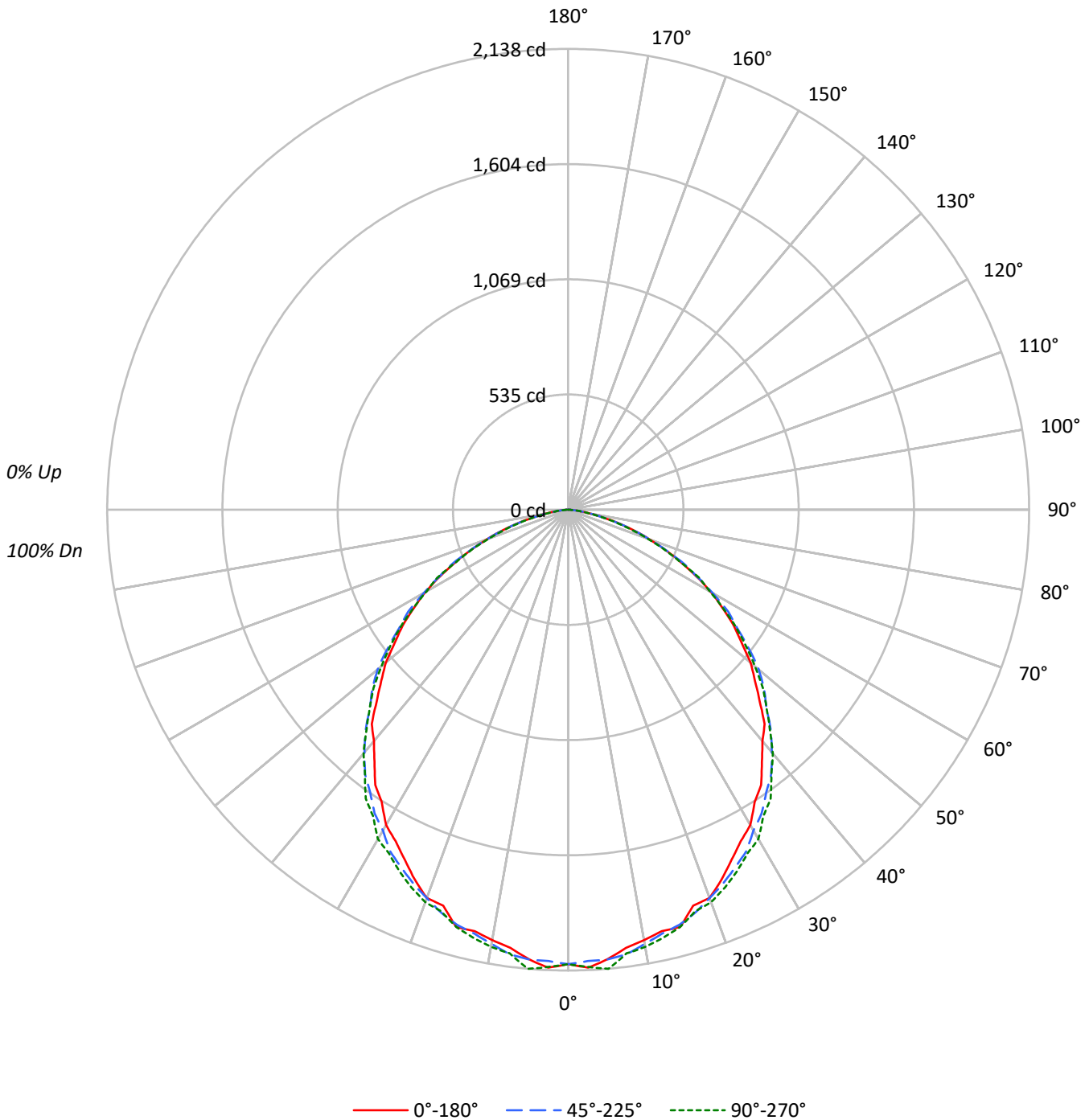
Lumens per Lamp: N/A  
Luminaire Lumens: 5314.0 lumens  
Efficiency: N/A  
Efficacy: 106.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88					86				
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75					73				
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64					62				
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55					53				
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48					46				
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43					41				
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38					36				
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34					32				
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31					29				
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28					26				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5674	5674	5674
5°	5655	5657	5776
10°	5540	5589	5628
15°	5584	5554	5585
20°	5490	5490	5548
25°	5321	5437	5497
30°	5248	5340	5482
35°	5124	5258	5377
40°	4925	5162	5185
45°	4776	4946	4953
50°	4619	4828	4735
55°	4401	4487	4455
60°	4116	4156	4082
65°	3670	3763	3643
70°	3149	3159	3072
75°	2493	2488	2391
80°	1671	1624	1561
85°	908	898	840

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5073 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	198.3	3.7
10°-20°	562.1	10.6
20°-30°	842.1	15.8
30°-40°	998.1	18.8
40°-50°	1000.0	18.8
50°-60°	848.8	16.0
60°-70°	572.2	10.8
70°-80°	251.4	4.7
80°-90°	40.9	0.8
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°	1602.6	30.2
0°-40°	2600.7	48.9
0°-60°	4449.4	83.7
0°-90°	5314.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5314.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2108	2108	2108	2108	2108	
5°	2094	2089	2094	2088	2138	197
15°	2004	1981	1994	2004	2005	558
25°	1792	1802	1831	1855	1852	829
35°	1560	1564	1601	1638	1637	969
45°	1255	1278	1300	1333	1302	971
55°	938	932	956	950	950	835
65°	576	569	591	568	572	573
75°	240	235	239	222	230	257
85°	29	29	29	28	27	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2108.5	2108.5	2108.5	2108.5	2108.5
2.5°	2126.7	2110.6	2095.7	2113.1	2123.7
5°	2093.5	2088.6	2094.3	2088.0	2138.4
7.5°	2050.5	2069.3	2080.1	2073.3	2076.3
10°	2027.6	2021.1	2045.3	2062.2	2059.7
12.5°	2003.1	2012.9	2014.3	2032.5	2034.1
15°	2004.5	1981.3	1993.6	2003.9	2004.7
17.5°	1926.6	1951.7	1960.1	1983.8	1954.4
20°	1917.1	1898.8	1917.1	1941.3	1937.5
22.5°	1858.5	1838.1	1877.3	1898.8	1897.5
25°	1792.1	1801.9	1831.3	1855.3	1851.5
27.5°	1733.9	1745.3	1787.2	1820.2	1798.9
30°	1688.9	1683.2	1718.6	1748.0	1764.4
32.5°	1608.6	1629.3	1670.7	1699.8	1684.3
35°	1559.9	1564.5	1600.7	1637.8	1636.7
37.5°	1474.7	1496.2	1547.1	1557.5	1547.9
40°	1402.0	1423.5	1469.5	1480.7	1476.1
42.5°	1348.4	1352.2	1391.7	1404.5	1384.0
45°	1255.0	1278.4	1299.7	1333.1	1301.6
47.5°	1175.5	1186.4	1232.1	1241.1	1224.5
50°	1103.4	1107.2	1153.2	1142.0	1131.1
52.5°	1012.7	1028.8	1054.6	1052.5	1039.7
55°	938.1	931.9	956.4	949.8	949.6
57.5°	848.6	859.4	879.6	869.2	852.6
60°	764.7	765.0	772.3	760.6	758.4
62.5°	671.3	674.6	676.2	661.8	685.2
65°	576.3	568.7	591.0	568.4	572.2
67.5°	488.9	492.7	490.6	476.4	481.9
70°	400.2	405.1	401.5	385.5	390.4
72.5°	319.1	313.1	316.9	296.7	306.0
75°	239.8	234.9	239.3	222.4	230.0
77.5°	163.3	167.2	164.4	155.4	160.6
80°	107.8	104.8	104.8	99.6	100.7
82.5°	62.9	59.9	59.1	57.4	59.9
85°	29.4	28.6	29.1	28.3	27.2
87.5°	10.6	10.9	10.9	10.3	9.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)