

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: P590704

Luminaire Tested: FSR-24-2-LD4-3STD-50-UNV-93-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590704  
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-50-UNV-93-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

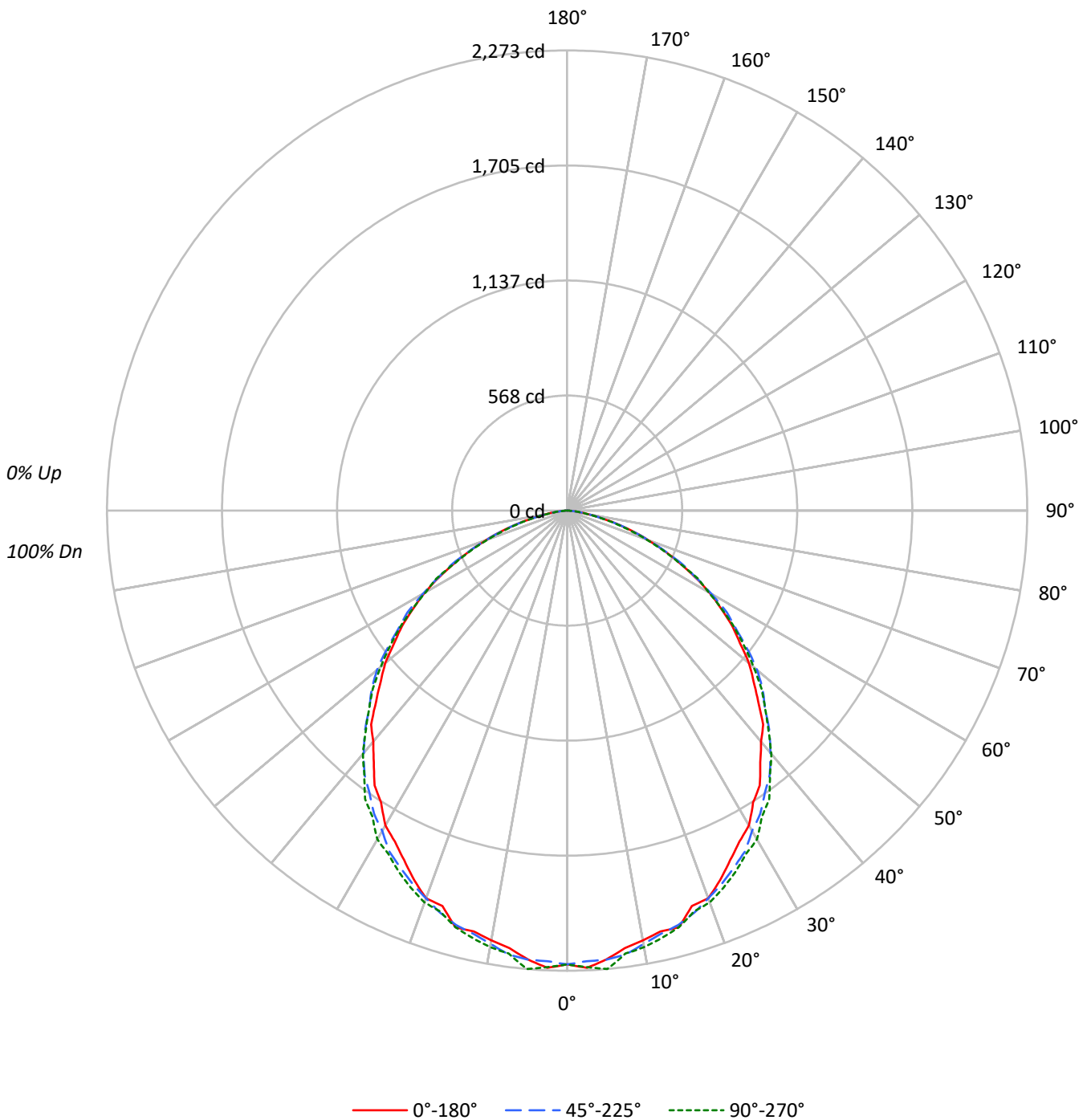
Lumens per Lamp: N/A  
Luminaire Lumens: 5649.0 lumens  
Efficiency: N/A  
Efficacy: 113.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	6032	6032	6032
5°	6012	6014	6140
10°	5890	5941	5983
15°	5936	5904	5937
20°	5836	5836	5898
25°	5657	5780	5844
30°	5579	5677	5828
35°	5447	5590	5716
40°	5236	5488	5512
45°	5077	5258	5265
50°	4910	5132	5034
55°	4679	4770	4736
60°	4375	4419	4339
65°	3901	4001	3873
70°	3347	3359	3265
75°	2651	2645	2542
80°	1776	1726	1660
85°	966	957	892

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5393 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	210.8	3.7
10°-20°	597.5	10.6
20°-30°	895.2	15.8
30°-40°	1061.0	18.8
40°-50°	1063.0	18.8
50°-60°	902.3	16.0
60°-70°	608.3	10.8
70°-80°	267.3	4.7
80°-90°	43.5	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°	1703.6	30.2
0°-40°	2764.6	48.9
0°-60°	4729.9	83.7
0°-90°	5649.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5649.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2241	2241	2241	2241	2241	
5°	2226	2220	2226	2220	2273	210
15°	2131	2106	2119	2130	2131	594
25°	1905	1916	1947	1972	1968	881
35°	1658	1663	1702	1741	1740	1030
45°	1334	1359	1382	1417	1384	1032
55°	997	991	1017	1010	1009	887
65°	613	605	628	604	608	609
75°	255	250	254	236	244	273
85°	31	30	31	30	29	45
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2241.4	2241.4	2241.4	2241.4	2241.4
2.5°	2260.8	2243.7	2227.8	2246.3	2257.6
5°	2225.5	2220.3	2226.3	2219.7	2273.2
7.5°	2179.7	2199.7	2211.3	2204.0	2207.2
10°	2155.4	2148.5	2174.2	2192.2	2189.6
12.5°	2129.4	2139.8	2141.2	2160.6	2162.4
15°	2130.8	2106.2	2119.3	2130.3	2131.1
17.5°	2048.1	2074.7	2083.7	2108.8	2077.6
20°	2037.9	2018.5	2037.9	2063.7	2059.6
22.5°	1975.7	1954.0	1995.7	2018.5	2017.1
25°	1905.1	1915.5	1946.8	1972.2	1968.2
27.5°	1843.2	1855.3	1899.9	1934.9	1912.3
30°	1795.4	1789.3	1827.0	1858.2	1875.6
32.5°	1710.0	1732.0	1776.0	1807.0	1790.5
35°	1658.2	1663.2	1701.7	1741.0	1739.9
37.5°	1567.7	1590.5	1644.6	1655.6	1645.5
40°	1490.4	1513.3	1562.2	1574.0	1569.1
42.5°	1433.4	1437.4	1479.4	1493.0	1471.3
45°	1334.1	1359.0	1381.6	1417.2	1383.6
47.5°	1249.6	1261.2	1309.8	1319.4	1301.7
50°	1172.9	1177.0	1225.9	1214.0	1202.4
52.5°	1076.6	1093.6	1121.1	1118.8	1105.2
55°	997.3	990.6	1016.7	1009.7	1009.4
57.5°	902.1	913.6	935.0	924.0	906.4
60°	812.9	813.2	821.0	808.6	806.3
62.5°	713.7	717.1	718.9	703.5	728.4
65°	612.7	604.6	628.3	604.3	608.3
67.5°	519.8	523.8	521.5	506.4	512.2
70°	425.4	430.6	426.9	409.8	415.0
72.5°	339.2	332.8	336.9	315.4	325.3
75°	255.0	249.7	254.4	236.4	244.5
77.5°	173.6	177.7	174.8	165.2	170.7
80°	114.6	111.4	111.4	105.9	107.1
82.5°	66.9	63.7	62.8	61.1	63.7
85°	31.3	30.4	31.0	30.1	28.9
87.5°	11.3	11.6	11.6	11.0	10.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)