

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: P590863

Luminaire Tested: FSR-24-2-LD4-4LO-40-UNV-93-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590863  
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-LD4-4LO-40-UNV-93-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

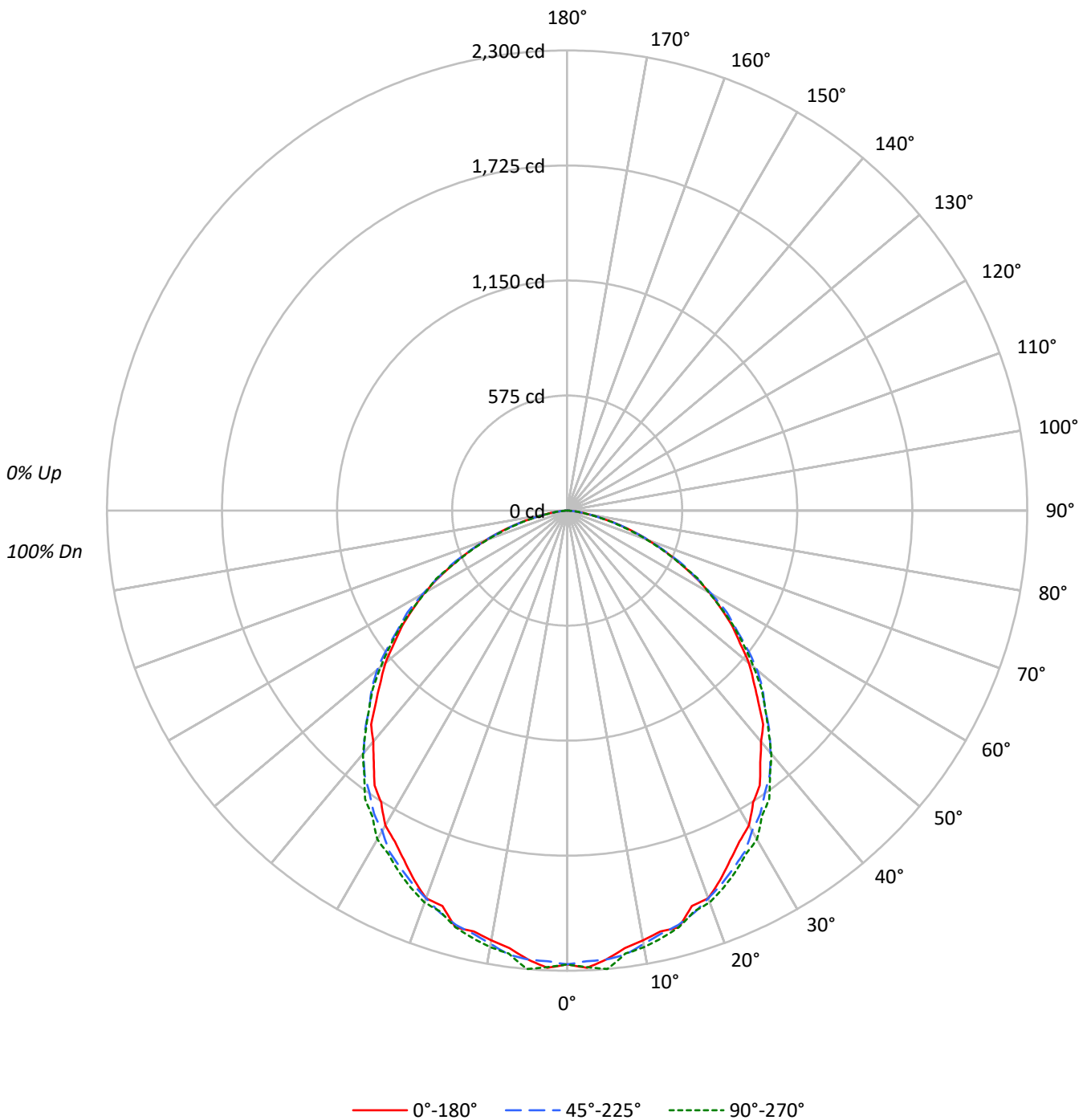
Lumens per Lamp: N/A  
Luminaire Lumens: 5716.0 lumens  
Efficiency: N/A  
Efficacy: 122.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	6103	6103	6103
5°	6083	6085	6213
10°	5960	6011	6054
15°	6007	5974	6008
20°	5905	5905	5968
25°	5724	5849	5913
30°	5645	5744	5897
35°	5512	5656	5783
40°	5298	5553	5577
45°	5137	5320	5328
50°	4968	5193	5094
55°	4734	4826	4792
60°	4427	4471	4391
65°	3947	4048	3919
70°	3387	3398	3304
75°	2682	2676	2572
80°	1798	1746	1678
85°	976	966	905

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5457 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	213.3	3.7
10°-20°	604.6	10.6
20°-30°	905.8	15.8
30°-40°	1073.6	18.8
40°-50°	1075.6	18.8
50°-60°	913.0	16.0
60°-70°	615.5	10.8
70°-80°	270.5	4.7
80°-90°	43.9	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°	1723.8	30.2
0°-40°	2797.4	48.9
0°-60°	4786.0	83.7
0°-90°	5716.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5716.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2268	2268	2268	2268	2268	
5°	2252	2247	2253	2246	2300	212
15°	2156	2131	2144	2156	2156	601
25°	1928	1938	1970	1996	1992	891
35°	1678	1683	1722	1762	1760	1042
45°	1350	1375	1398	1434	1400	1044
55°	1009	1002	1029	1022	1021	898
65°	620	612	636	611	616	617
75°	258	253	257	239	247	276
85°	32	31	31	30	29	46
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2268.0	2268.0	2268.0	2268.0	2268.0
2.5°	2287.6	2270.3	2254.2	2272.9	2284.4
5°	2251.9	2246.6	2252.7	2246.0	2300.2
7.5°	2205.6	2225.8	2237.5	2230.2	2233.4
10°	2181.0	2174.0	2200.0	2218.2	2215.5
12.5°	2154.6	2165.2	2166.6	2186.3	2188.0
15°	2156.1	2131.2	2144.4	2155.5	2156.4
17.5°	2072.4	2099.3	2108.4	2133.8	2102.2
20°	2062.1	2042.5	2062.1	2088.2	2084.1
22.5°	1999.1	1977.2	2019.4	2042.5	2041.0
25°	1927.7	1938.2	1969.9	1995.6	1991.5
27.5°	1865.0	1877.3	1922.4	1957.9	1935.0
30°	1816.7	1810.6	1848.6	1880.3	1897.8
32.5°	1730.3	1752.6	1797.1	1828.4	1811.7
35°	1677.9	1682.9	1721.8	1761.7	1760.5
37.5°	1586.3	1609.4	1664.2	1675.3	1665.0
40°	1508.1	1531.2	1580.7	1592.7	1587.7
42.5°	1450.4	1454.5	1496.9	1510.7	1488.7
45°	1349.9	1375.1	1398.0	1434.0	1400.0
47.5°	1264.4	1276.2	1325.3	1335.0	1317.1
50°	1186.8	1190.9	1240.4	1228.4	1216.7
52.5°	1089.3	1106.6	1134.4	1132.1	1118.3
55°	1009.1	1002.4	1028.7	1021.7	1021.4
57.5°	912.7	924.5	946.1	935.0	917.1
60°	822.6	822.9	830.8	818.2	815.8
62.5°	722.1	725.6	727.4	711.9	737.1
65°	619.9	611.7	635.7	611.4	615.5
67.5°	525.9	530.0	527.7	512.5	518.3
70°	430.5	435.7	431.9	414.6	419.9
72.5°	343.2	336.8	340.9	319.2	329.1
75°	258.0	252.7	257.4	239.2	247.4
77.5°	175.7	179.8	176.9	167.2	172.8
80°	116.0	112.7	112.7	107.2	108.3
82.5°	67.6	64.4	63.5	61.8	64.4
85°	31.6	30.7	31.3	30.5	29.3
87.5°	11.4	11.7	11.7	11.1	10.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)