

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: P561705

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-93-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561705  
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-LD4-2LO-50-UNV-93-88-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

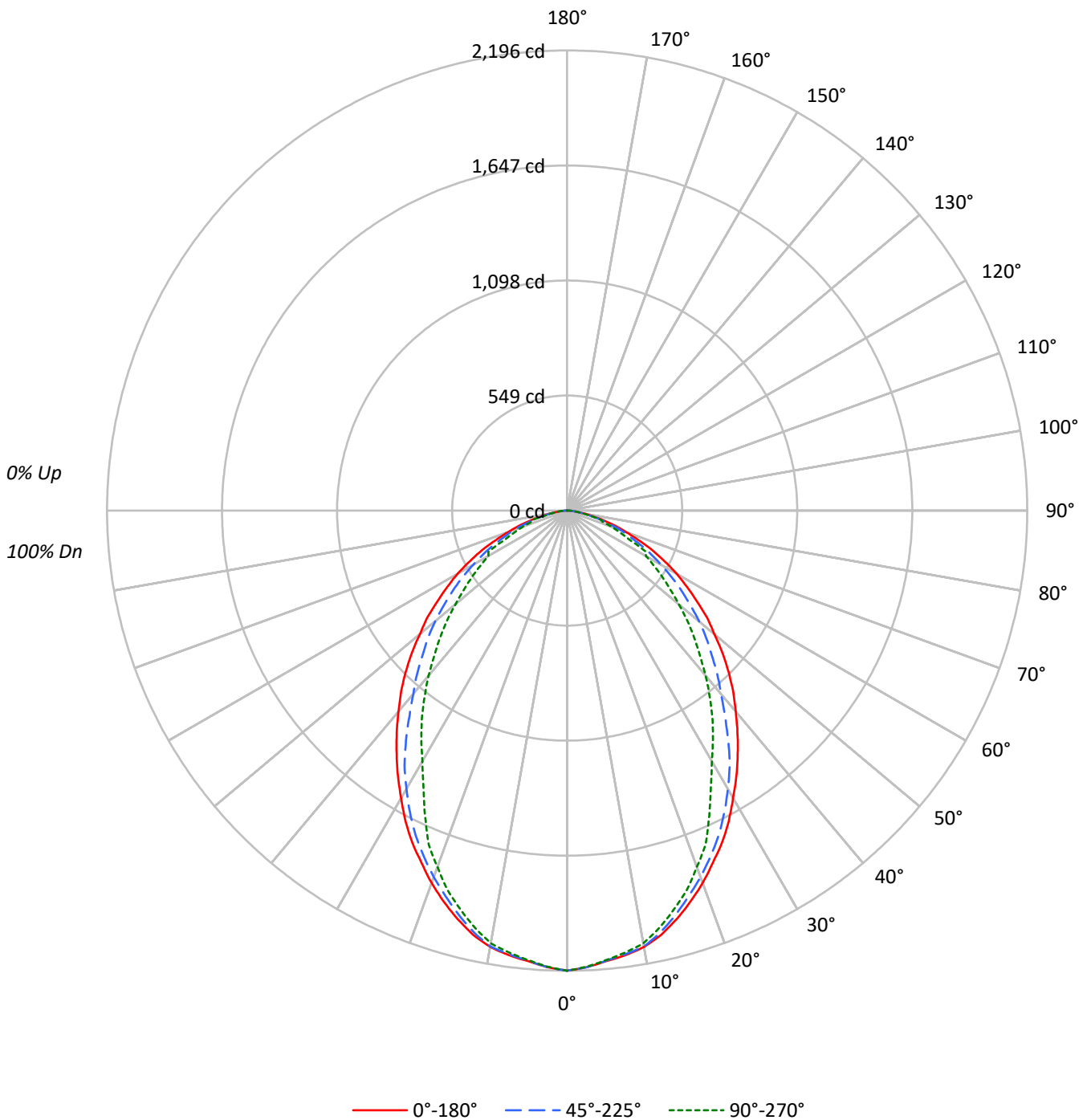
Lumens per Lamp: N/A  
Luminaire Lumens: 4311.0 lumens  
Efficiency: N/A  
Efficacy: 92.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5909	5909	5909
5°	5829	5822	5815
10°	5778	5772	5730
15°	5623	5566	5488
20°	5416	5329	5184
25°	5194	5081	4764
30°	4922	4765	4291
35°	4662	4403	3970
40°	4397	4013	3612
45°	4145	3710	3266
50°	3837	3443	2912
55°	3549	3120	2609
60°	3252	2787	2336
65°	2861	2441	2069
70°	2357	2137	1758
75°	1874	1637	1716
80°	1258	1181	1102
85°	784	942	1096

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4145 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	204.4	4.7
10°-20°	561.0	13.0
20°-30°	776.7	18.0
30°-40°	828.1	19.2
40°-50°	755.5	17.5
50°-60°	591.9	13.7
60°-70°	385.8	8.9
70°-80°	170.9	4.0
80°-90°	36.7	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°	1542.1	35.8
0°-40°	2370.2	55.0
0°-60°	3717.6	86.2
0°-90°	4311.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4311.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2196	2196	2196	2196	2196	
5°	2158	2155	2155	2153	2153	205
15°	2018	2018	1998	1978	1970	567
25°	1749	1739	1711	1650	1604	803
35°	1419	1409	1340	1239	1208	887
45°	1089	1066	975	894	858	839
55°	756	734	665	586	556	679
65°	449	424	383	391	325	443
75°	180	168	157	150	165	193
85°	25	28	30	33	36	35
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2196.0	2196.0	2196.0	2196.0	2196.0
2.5°	2180.7	2180.7	2180.7	2178.2	2178.2
5°	2157.9	2155.3	2155.3	2152.8	2152.8
7.5°	2140.1	2137.6	2135.0	2132.5	2127.4
10°	2114.7	2114.7	2112.2	2099.5	2097.0
12.5°	2074.1	2071.6	2061.4	2043.6	2038.6
15°	2018.3	2018.3	1997.9	1977.6	1970.0
17.5°	1957.3	1954.8	1929.4	1909.1	1898.9
20°	1891.3	1886.2	1860.9	1827.9	1810.1
22.5°	1817.7	1817.7	1787.2	1744.1	1726.3
25°	1749.2	1739.0	1711.1	1650.1	1604.5
27.5°	1670.5	1655.2	1624.8	1538.4	1485.1
30°	1584.1	1576.5	1533.4	1421.7	1381.0
32.5°	1502.9	1490.2	1444.5	1327.7	1294.7
35°	1419.1	1409.0	1340.4	1238.9	1208.4
37.5°	1335.4	1322.7	1236.3	1155.1	1117.0
40°	1251.6	1236.3	1142.4	1068.8	1028.2
42.5°	1172.9	1152.6	1061.2	982.5	936.8
45°	1089.1	1066.2	974.9	893.6	858.1
47.5°	1005.3	985.0	901.2	817.5	776.8
50°	916.5	898.7	822.5	738.8	695.6
52.5°	842.8	814.9	741.3	657.5	622.0
55°	756.5	733.7	665.1	586.4	556.0
57.5°	677.8	655.0	591.5	517.9	492.5
60°	604.2	571.2	517.9	454.4	434.1
62.5°	523.0	497.6	451.9	398.6	424.0
65°	449.3	424.0	383.3	391.0	325.0
67.5°	368.1	355.4	319.9	284.3	274.2
70°	299.6	284.3	271.6	233.6	223.4
72.5°	238.6	223.4	205.6	185.3	177.7
75°	180.2	167.6	157.4	149.8	165.0
77.5°	124.4	119.3	111.7	104.1	101.5
80°	81.2	78.7	76.2	73.6	71.1
82.5°	48.2	48.2	48.2	48.2	48.2
85°	25.4	27.9	30.5	33.0	35.5
87.5°	15.2	15.2	17.8	20.3	22.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)