

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: P562092

Luminaire Tested: FSR-24-4-LD4-1HI-40-UNV-93-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562092  
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-40-UNV-93-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

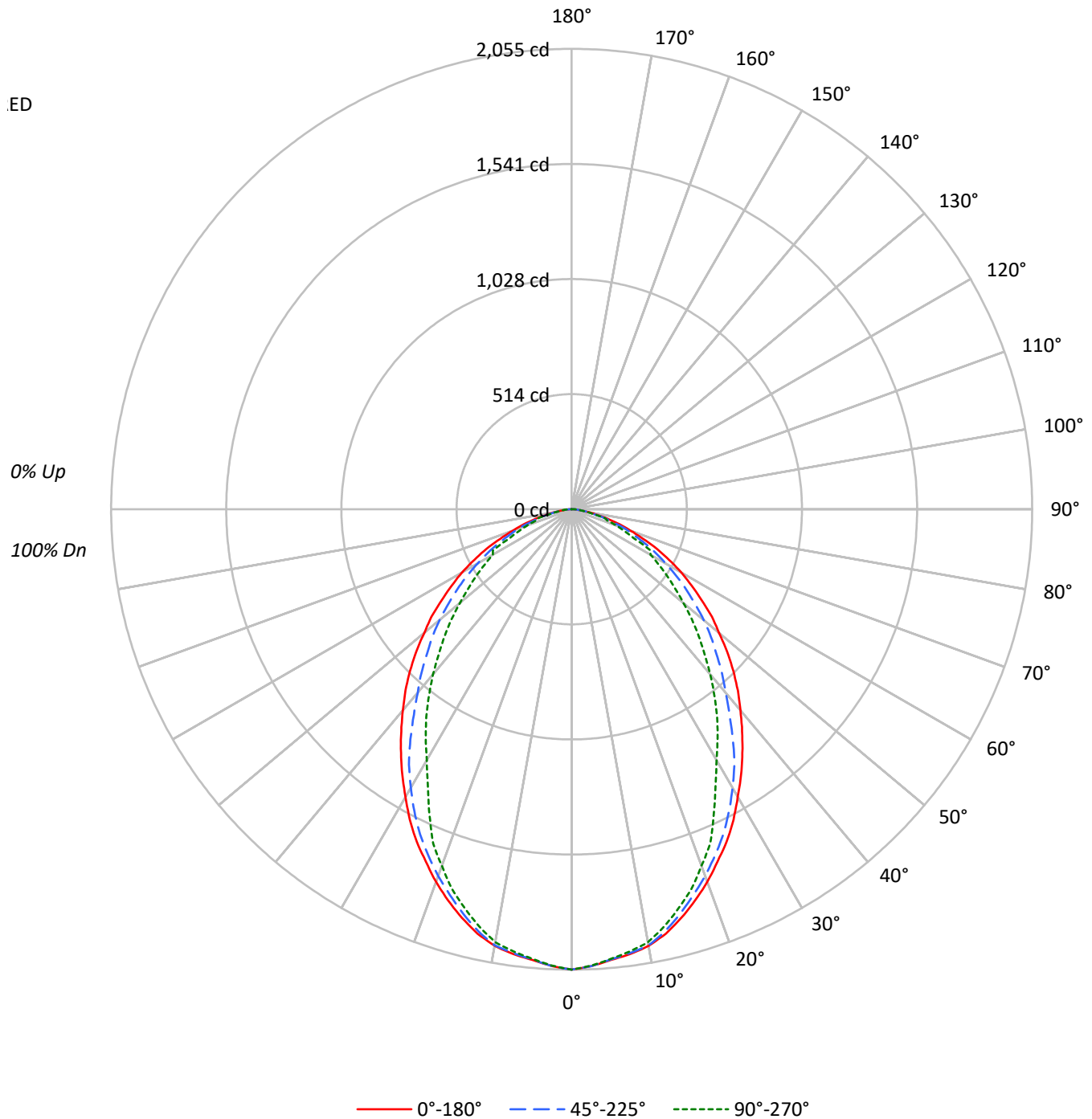
Lumens per Lamp: N/A  
Luminaire Lumens: 4034.0 lumens  
Efficiency: N/A  
Efficacy: 93.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	2765	2765	2765
5°	2727	2724	2721
10°	2704	2700	2681
15°	2631	2604	2568
20°	2534	2493	2425
25°	2430	2377	2229
30°	2303	2229	2008
35°	2181	2060	1857
40°	2057	1878	1690
45°	1939	1736	1528
50°	1795	1611	1362
55°	1661	1460	1220
60°	1521	1304	1093
65°	1339	1142	968
70°	1103	1000	822
75°	877	766	803
80°	589	552	515
85°	367	440	514

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1939 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	191.3	4.7
10°-20°	525.0	13.0
20°-30°	726.8	18.0
30°-40°	774.9	19.2
40°-50°	707.0	17.5
50°-60°	553.9	13.7
60°-70°	361.0	8.9
70°-80°	159.9	4.0
80°-90°	34.3	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°	1443.0	35.8
0°-40°	2217.9	55.0
0°-60°	3478.8	86.2
0°-90°	4034.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4034.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2055	2055	2055	2055	2055	
5°	2019	2017	2017	2014	2014	192
15°	1889	1889	1870	1851	1843	531
25°	1637	1627	1601	1544	1501	751
35°	1328	1318	1254	1159	1131	830
45°	1019	998	912	836	803	785
55°	708	686	622	549	520	635
65°	420	397	359	366	304	414
75°	169	157	147	140	154	181
85°	24	26	28	31	33	33
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2054.9	2054.9	2054.9	2054.9	2054.9
2.5°	2040.6	2040.6	2040.6	2038.2	2038.2
5°	2019.2	2016.9	2016.9	2014.5	2014.5
7.5°	2002.6	2000.2	1997.9	1995.5	1990.7
10°	1978.8	1978.8	1976.5	1964.6	1962.2
12.5°	1940.8	1938.5	1929.0	1912.3	1907.6
15°	1888.6	1888.6	1869.6	1850.6	1843.4
17.5°	1831.6	1829.2	1805.4	1786.4	1776.9
20°	1769.8	1765.0	1741.3	1710.4	1693.8
22.5°	1700.9	1700.9	1672.4	1632.0	1615.4
25°	1636.8	1627.3	1601.1	1544.1	1501.4
27.5°	1563.1	1548.9	1520.4	1439.6	1389.7
30°	1482.4	1475.2	1434.8	1330.3	1292.3
32.5°	1406.3	1394.5	1351.7	1242.4	1211.5
35°	1327.9	1318.4	1254.3	1159.3	1130.8
37.5°	1249.5	1237.7	1156.9	1080.9	1045.2
40°	1171.2	1156.9	1069.0	1000.1	962.1
42.5°	1097.5	1078.5	993.0	919.3	876.6
45°	1019.1	997.7	912.2	836.2	802.9
47.5°	940.7	921.7	843.3	764.9	726.9
50°	857.6	841.0	769.7	691.3	650.9
52.5°	788.7	762.6	693.7	615.3	582.0
55°	707.9	686.5	622.4	548.8	520.2
57.5°	634.3	612.9	553.5	484.6	460.9
60°	565.4	534.5	484.6	425.2	406.2
62.5°	489.4	465.6	422.9	373.0	396.7
65°	420.5	396.7	358.7	365.8	304.1
67.5°	344.5	332.6	299.3	266.1	256.6
70°	280.3	266.1	254.2	218.6	209.0
72.5°	223.3	209.0	192.4	173.4	166.3
75°	168.7	156.8	147.3	140.2	154.4
77.5°	116.4	111.7	104.5	97.4	95.0
80°	76.0	73.6	71.3	68.9	66.5
82.5°	45.1	45.1	45.1	45.1	45.1
85°	23.8	26.1	28.5	30.9	33.3
87.5°	14.3	14.3	16.6	19.0	21.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)