

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: P562450

Luminaire Tested: FSR-24-4-LD4-1STD-50-UNV-82-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562450  
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-LD4-1STD-50-UNV-82-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

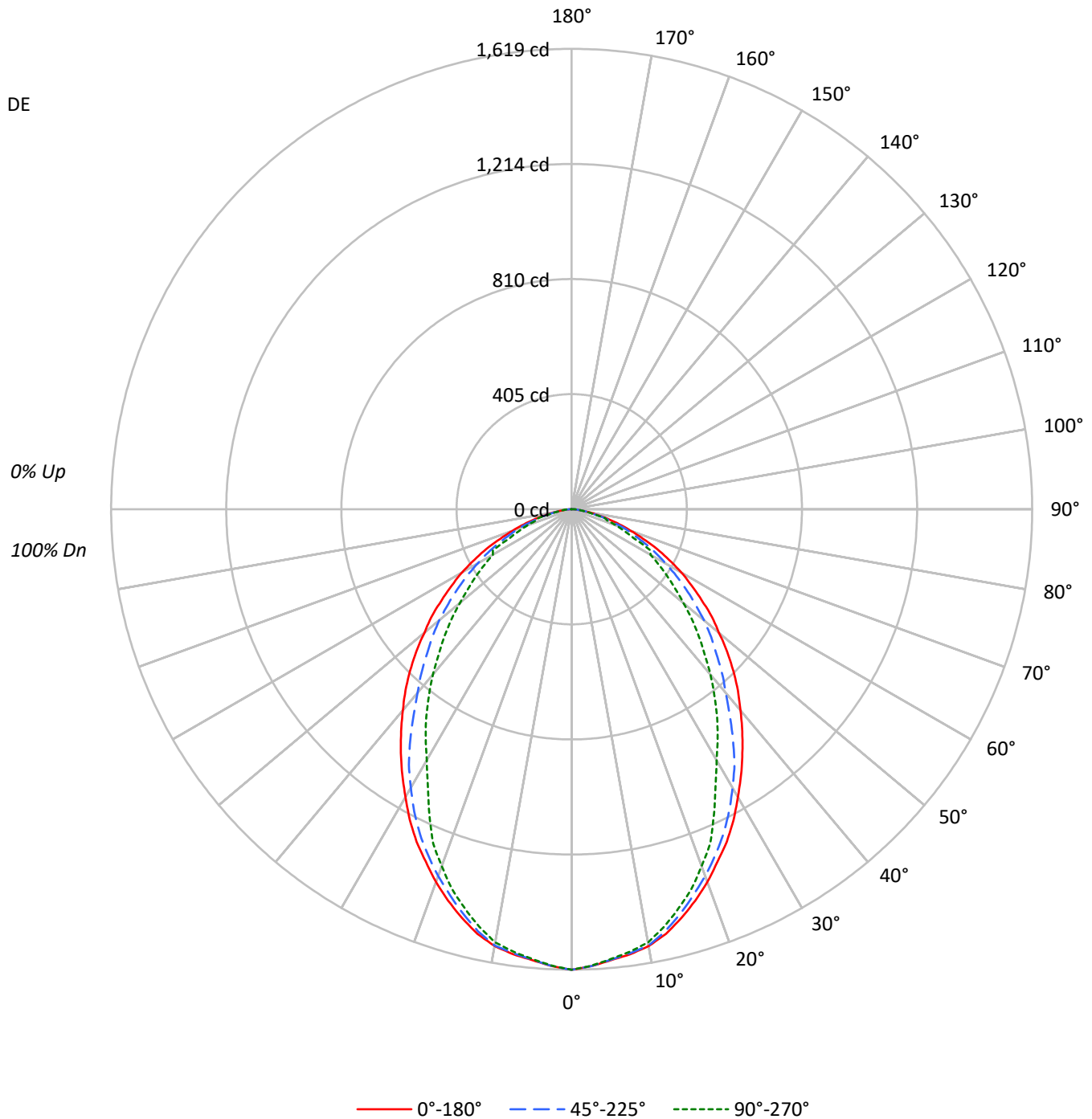
Lumens per Lamp: N/A  
Luminaire Lumens: 3179.0 lumens  
Efficiency: N/A  
Efficacy: 95.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2179	2179	2179
5°	2149	2147	2144
10°	2131	2128	2113
15°	2073	2052	2024
20°	1997	1965	1911
25°	1915	1873	1756
30°	1815	1757	1582
35°	1719	1624	1464
40°	1621	1480	1332
45°	1528	1368	1204
50°	1415	1270	1074
55°	1309	1151	962
60°	1199	1028	861
65°	1055	900	763
70°	869	788	648
75°	691	604	633
80°	464	435	406
85°	289	347	404

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1528 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	150.7	4.7
10°-20°	413.7	13.0
20°-30°	572.7	18.0
30°-40°	610.7	19.2
40°-50°	557.1	17.5
50°-60°	436.5	13.7
60°-70°	284.5	8.9
70°-80°	126.0	4.0
80°-90°	27.1	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°	1137.2	35.8
0°-40°	1747.8	55.0
0°-60°	2741.4	86.2
0°-90°	3179.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3179.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1619	1619	1619	1619	1619	
5°	1591	1589	1589	1588	1588	151
15°	1488	1488	1473	1458	1453	418
25°	1290	1282	1262	1217	1183	592
35°	1046	1039	988	914	891	654
45°	803	786	719	659	633	619
55°	558	541	490	432	410	500
65°	331	313	283	288	240	327
75°	133	124	116	110	122	142
85°	19	21	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1619.3	1619.3	1619.3	1619.3	1619.3
2.5°	1608.1	1608.1	1608.1	1606.2	1606.2
5°	1591.3	1589.4	1589.4	1587.5	1587.5
7.5°	1578.2	1576.3	1574.4	1572.5	1568.8
10°	1559.4	1559.4	1557.6	1548.2	1546.3
12.5°	1529.5	1527.6	1520.1	1507.0	1503.3
15°	1488.3	1488.3	1473.3	1458.3	1452.7
17.5°	1443.4	1441.5	1422.8	1407.8	1400.3
20°	1394.7	1390.9	1372.2	1347.9	1334.8
22.5°	1340.4	1340.4	1317.9	1286.1	1273.0
25°	1289.9	1282.4	1261.8	1216.8	1183.1
27.5°	1231.8	1220.6	1198.1	1134.5	1095.2
30°	1168.2	1162.6	1130.7	1048.4	1018.4
32.5°	1108.3	1098.9	1065.2	979.1	954.8
35°	1046.5	1039.0	988.5	913.6	891.1
37.5°	984.7	975.3	911.7	851.8	823.7
40°	922.9	911.7	842.4	788.1	758.2
42.5°	864.9	849.9	782.5	724.5	690.8
45°	803.1	786.3	718.9	659.0	632.8
47.5°	741.3	726.4	664.6	602.8	572.9
50°	675.8	662.7	606.6	544.8	512.9
52.5°	621.5	600.9	546.6	484.9	458.7
55°	557.9	541.0	490.5	432.4	410.0
57.5°	499.8	483.0	436.2	381.9	363.2
60°	445.6	421.2	381.9	335.1	320.1
62.5°	385.6	366.9	333.2	293.9	312.6
65°	331.4	312.6	282.7	288.3	239.6
67.5°	271.5	262.1	235.9	209.7	202.2
70°	220.9	209.7	200.3	172.2	164.7
72.5°	176.0	164.7	151.6	136.7	131.0
75°	132.9	123.6	116.1	110.5	121.7
77.5°	91.7	88.0	82.4	76.8	74.9
80°	59.9	58.0	56.2	54.3	52.4
82.5°	35.6	35.6	35.6	35.6	35.6
85°	18.7	20.6	22.5	24.3	26.2
87.5°	11.2	11.2	13.1	15.0	16.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)