

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: P562313

Luminaire Tested: FSR-24-4-LD4-1STD-35-UNV-81-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562313  
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-35-UNV-81-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

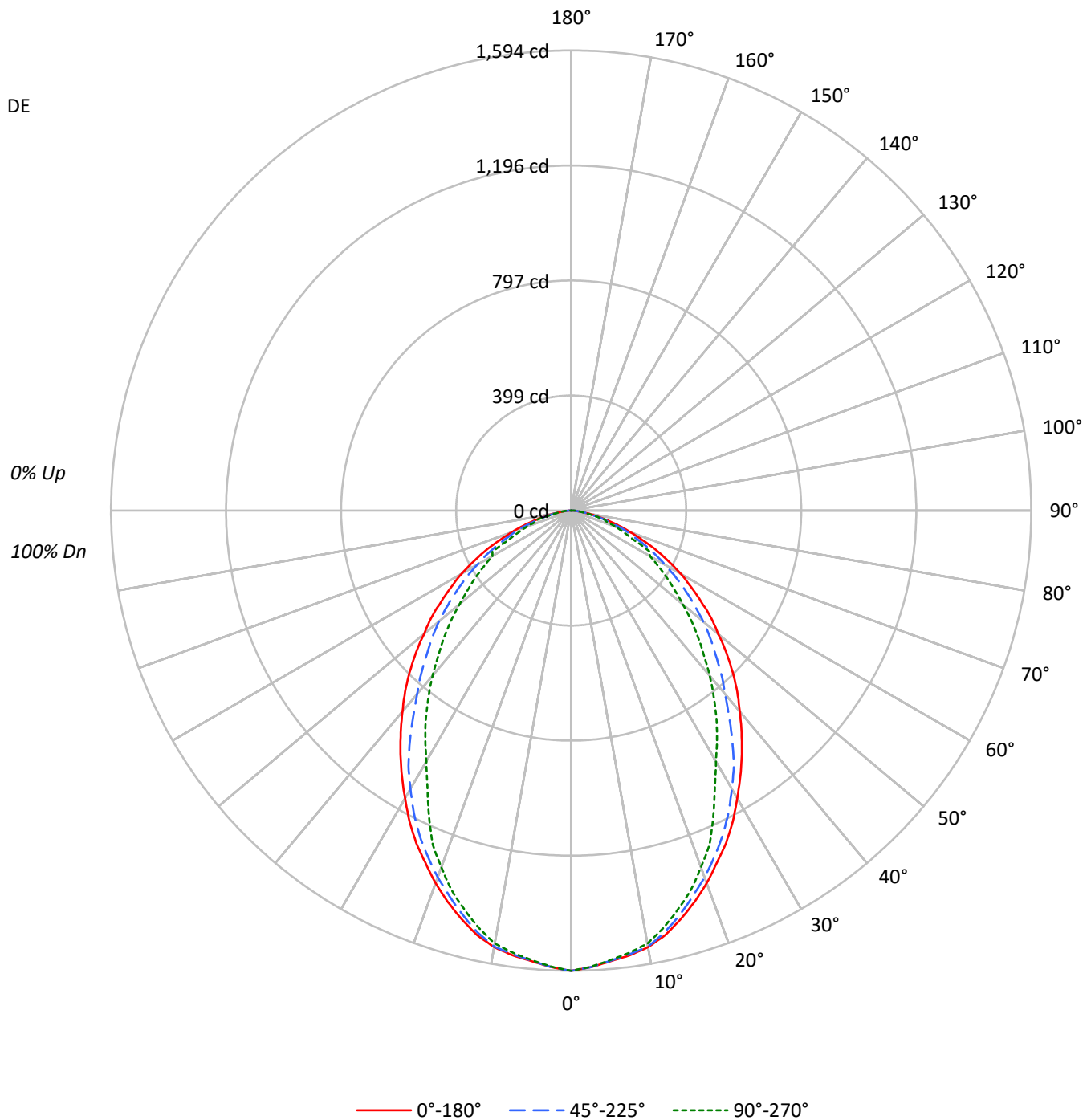
Lumens per Lamp: N/A  
Luminaire Lumens: 3130.0 lumens  
Efficiency: N/A  
Efficacy: 94.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2145	2145	2145
5°	2116	2114	2111
10°	2098	2095	2080
15°	2041	2021	1992
20°	1966	1935	1882
25°	1885	1844	1729
30°	1787	1730	1558
35°	1692	1599	1441
40°	1596	1457	1311
45°	1505	1347	1185
50°	1393	1250	1057
55°	1289	1133	947
60°	1181	1012	848
65°	1039	886	751
70°	856	776	638
75°	680	594	623
80°	457	428	400
85°	284	341	398

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1505 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.4	4.7
10°-20°	407.3	13.0
20°-30°	563.9	18.0
30°-40°	601.3	19.2
40°-50°	548.5	17.5
50°-60°	429.7	13.7
60°-70°	280.1	8.9
70°-80°	124.1	4.0
80°-90°	26.6	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°	1119.6	35.8
0°-40°	1720.9	55.0
0°-60°	2699.2	86.2
0°-90°	3130.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3130.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1594	1594	1594	1594	1594	
5°	1567	1565	1565	1563	1563	149
15°	1465	1465	1451	1436	1430	412
25°	1270	1263	1242	1198	1165	583
35°	1030	1023	973	900	877	644
45°	791	774	708	649	623	609
55°	549	533	483	426	404	493
65°	326	308	278	284	236	322
75°	131	122	114	109	120	140
85°	18	20	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°	1594.4	1594.4	1594.4	1594.4	1594.4
2.5°	1583.3	1583.3	1583.3	1581.5	1581.5
5°	1566.7	1564.9	1564.9	1563.0	1563.0
7.5°	1553.8	1552.0	1550.1	1548.3	1544.6
10°	1535.4	1535.4	1533.6	1524.3	1522.5
12.5°	1505.9	1504.1	1496.7	1483.8	1480.1
15°	1465.4	1465.4	1450.6	1435.9	1430.3
17.5°	1421.1	1419.3	1400.8	1386.1	1378.7
20°	1373.2	1369.5	1351.1	1327.1	1314.2
22.5°	1319.7	1319.7	1297.6	1266.3	1253.4
25°	1270.0	1262.6	1242.3	1198.1	1164.9
27.5°	1212.8	1201.8	1179.7	1117.0	1078.3
30°	1150.2	1144.6	1113.3	1032.2	1002.7
32.5°	1091.2	1082.0	1048.8	964.0	940.0
35°	1030.4	1023.0	973.2	899.5	877.4
37.5°	969.5	960.3	897.6	838.7	811.0
40°	908.7	897.6	829.4	776.0	746.5
42.5°	851.6	836.8	770.5	713.3	680.1
45°	790.7	774.1	707.8	648.8	623.0
47.5°	729.9	715.2	654.3	593.5	564.0
50°	665.4	652.5	597.2	536.4	505.0
52.5°	611.9	591.7	538.2	477.4	451.6
55°	549.3	532.7	482.9	425.8	403.7
57.5°	492.1	475.5	429.5	376.0	357.6
60°	438.7	414.7	376.0	329.9	315.2
62.5°	379.7	361.3	328.1	289.4	307.8
65°	326.2	307.8	278.3	283.9	235.9
67.5°	267.3	258.0	232.2	206.4	199.1
70°	217.5	206.4	197.2	169.6	162.2
72.5°	173.3	162.2	149.3	134.6	129.0
75°	130.9	121.7	114.3	108.7	119.8
77.5°	90.3	86.6	81.1	75.6	73.7
80°	59.0	57.1	55.3	53.5	51.6
82.5°	35.0	35.0	35.0	35.0	35.0
85°	18.4	20.3	22.1	24.0	25.8
87.5°	11.1	11.1	12.9	14.7	16.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)