

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: P562324

Luminaire Tested: FSR-24-4-LD4-1STD-35-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562324  
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-82-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

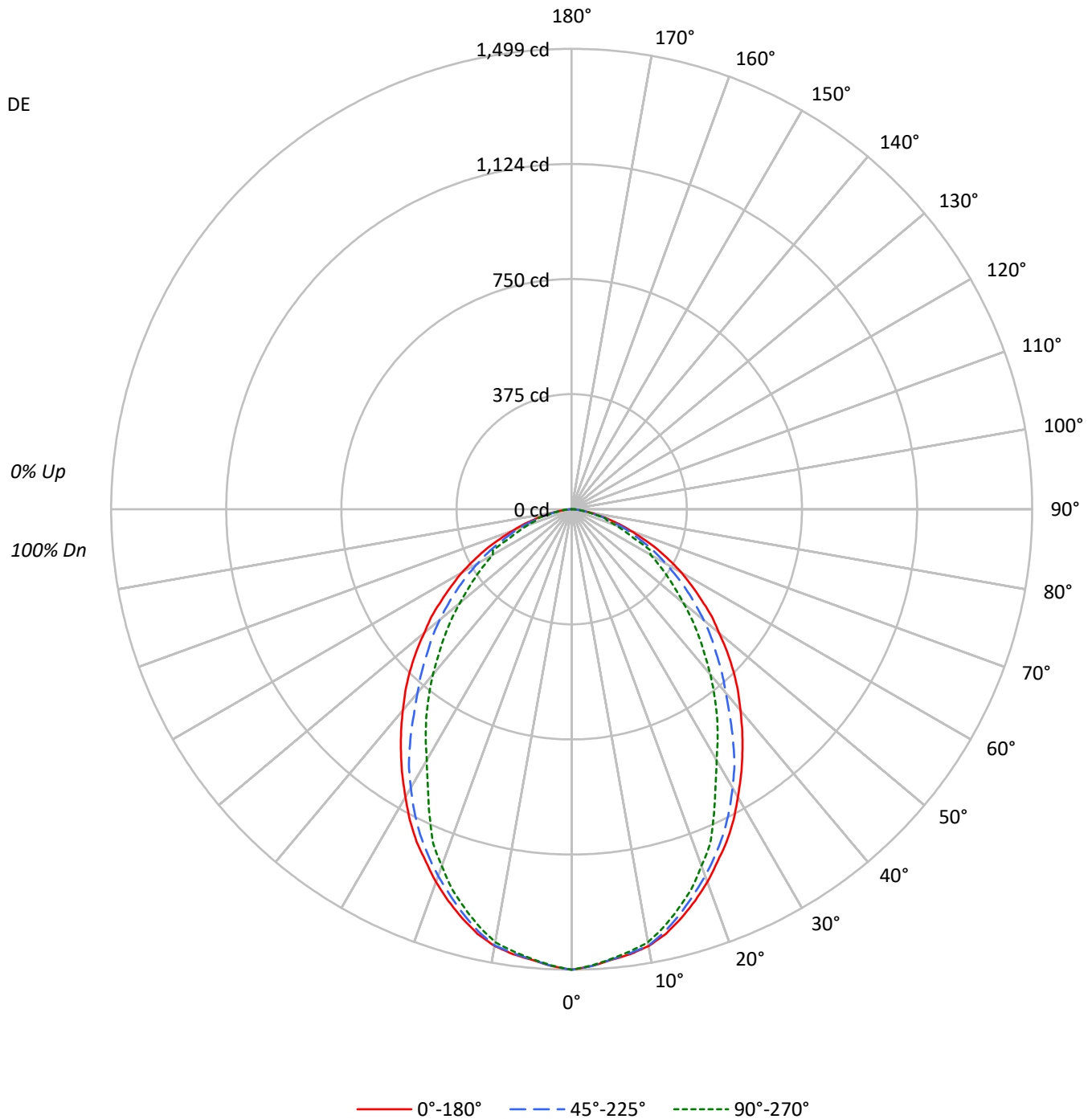
Lumens per Lamp: N/A  
Luminaire Lumens: 2943.0 lumens  
Efficiency: N/A  
Efficacy: 88.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2017	2017	2017
5°	1990	1987	1985
10°	1972	1970	1956
15°	1919	1900	1873
20°	1849	1819	1769
25°	1773	1734	1626
30°	1680	1626	1465
35°	1591	1503	1355
40°	1501	1370	1233
45°	1415	1266	1115
50°	1310	1175	994
55°	1212	1065	890
60°	1110	952	798
65°	977	833	706
70°	804	729	600
75°	639	559	586
80°	430	403	376
85°	267	321	375

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1415 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	139.5	4.7
10°-20°	383.0	13.0
20°-30°	530.2	18.0
30°-40°	565.4	19.2
40°-50°	515.8	17.5
50°-60°	404.1	13.7
60°-70°	263.3	8.9
70°-80°	116.7	4.0
80°-90°	25.0	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°	1052.7	35.8
0°-40°	1618.1	55.0
0°-60°	2537.9	86.2
0°-90°	2943.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2943.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1499	1499	1499	1499	1499	
5°	1473	1471	1471	1470	1470	140
15°	1378	1378	1364	1350	1345	387
25°	1194	1187	1168	1126	1095	548
35°	969	962	915	846	825	606
45°	744	728	666	610	586	573
55°	516	501	454	400	380	463
65°	307	289	262	267	222	302
75°	123	114	108	102	113	132
85°	17	19	21	22	24	24
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1499.1	1499.1	1499.1	1499.1	1499.1
2.5°	1488.7	1488.7	1488.7	1487.0	1487.0
5°	1473.1	1471.4	1471.4	1469.7	1469.7
7.5°	1461.0	1459.3	1457.5	1455.8	1452.3
10°	1443.7	1443.7	1441.9	1433.3	1431.5
12.5°	1415.9	1414.2	1407.3	1395.1	1391.7
15°	1377.8	1377.8	1363.9	1350.1	1344.9
17.5°	1336.2	1334.5	1317.2	1303.3	1296.4
20°	1291.2	1287.7	1270.4	1247.8	1235.7
22.5°	1240.9	1240.9	1220.1	1190.6	1178.5
25°	1194.1	1187.2	1168.1	1126.5	1095.3
27.5°	1140.4	1130.0	1109.2	1050.3	1013.9
30°	1081.4	1076.3	1046.8	970.5	942.8
32.5°	1026.0	1017.3	986.1	906.4	883.9
35°	968.8	961.9	915.1	845.7	825.0
37.5°	911.6	902.9	844.0	788.6	762.6
40°	854.4	844.0	779.9	729.6	701.9
42.5°	800.7	786.8	724.4	670.7	639.5
45°	743.5	727.9	665.5	610.0	585.8
47.5°	686.3	672.4	615.2	558.1	530.3
50°	625.6	613.5	561.5	504.3	474.9
52.5°	575.4	556.3	506.1	448.9	424.6
55°	516.5	500.9	454.1	400.3	379.5
57.5°	462.7	447.1	403.8	353.6	336.2
60°	412.5	389.9	353.6	310.2	296.4
62.5°	357.0	339.7	308.5	272.1	289.4
65°	306.8	289.4	261.7	266.9	221.8
67.5°	251.3	242.6	218.4	194.1	187.2
70°	204.5	194.1	185.4	159.4	152.5
72.5°	162.9	152.5	140.4	126.5	121.3
75°	123.0	114.4	107.5	102.3	112.7
77.5°	84.9	81.5	76.3	71.1	69.3
80°	55.5	53.7	52.0	50.3	48.5
82.5°	32.9	32.9	32.9	32.9	32.9
85°	17.3	19.1	20.8	22.5	24.3
87.5°	10.4	10.4	12.1	13.9	15.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)