

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: P562370

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-81-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562370  
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-40-UNV-81-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

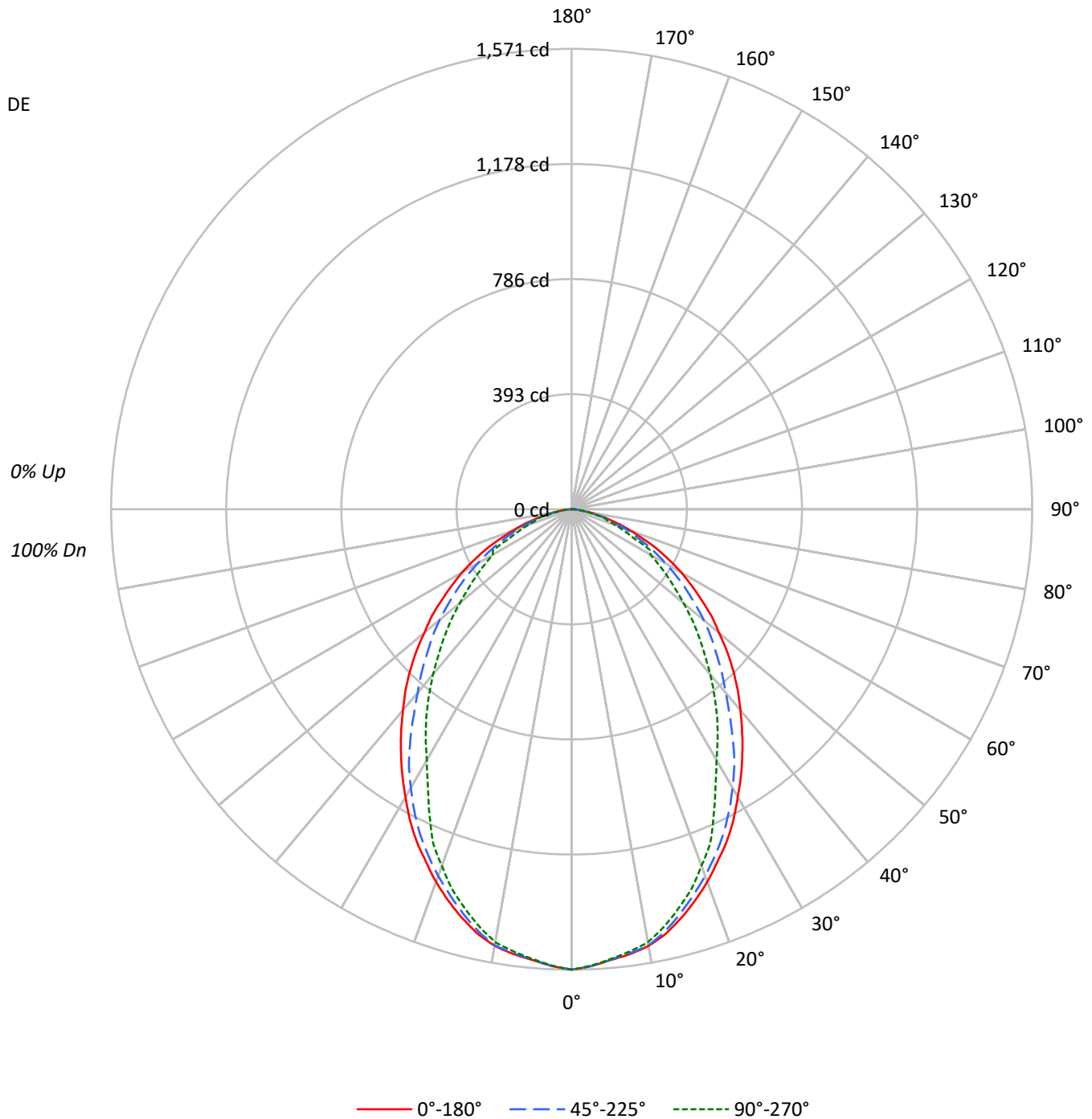
Lumens per Lamp: N/A  
Luminaire Lumens: 3084.0 lumens  
Efficiency: N/A  
Efficacy: 92.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2114	2114	2114
5°	2085	2083	2080
10°	2067	2064	2050
15°	2011	1991	1963
20°	1937	1906	1854
25°	1858	1817	1704
30°	1761	1704	1535
35°	1668	1575	1420
40°	1573	1436	1292
45°	1482	1327	1168
50°	1372	1232	1042
55°	1270	1116	933
60°	1163	997	836
65°	1024	873	740
70°	843	764	629
75°	670	585	613
80°	450	422	394
85°	281	337	392

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1482 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.2	4.7
10°-20°	401.3	13.0
20°-30°	555.6	18.0
30°-40°	592.4	19.2
40°-50°	540.5	17.5
50°-60°	423.4	13.7
60°-70°	276.0	8.9
70°-80°	122.3	4.0
80°-90°	26.2	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°	1103.2	35.8
0°-40°	1695.6	55.0
0°-60°	2659.5	86.2
0°-90°	3084.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3084.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1571	1571	1571	1571	1571	
5°	1544	1542	1542	1540	1540	147
15°	1444	1444	1429	1415	1409	406
25°	1251	1244	1224	1180	1148	574
35°	1015	1008	959	886	864	635
45°	779	763	697	639	614	600
55°	541	525	476	420	398	485
65°	322	303	274	280	232	317
75°	129	120	113	107	118	138
85°	18	20	22	24	25	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1570.9	1570.9	1570.9	1570.9	1570.9
2.5°	1560.1	1560.1	1560.1	1558.2	1558.2
5°	1543.7	1541.9	1541.9	1540.1	1540.1
7.5°	1531.0	1529.2	1527.4	1525.5	1521.9
10°	1512.8	1512.8	1511.0	1501.9	1500.1
12.5°	1483.8	1482.0	1474.7	1462.0	1458.3
15°	1443.8	1443.8	1429.3	1414.8	1409.3
17.5°	1400.2	1398.4	1380.3	1365.7	1358.5
20°	1353.0	1349.4	1331.2	1307.6	1294.9
22.5°	1300.3	1300.3	1278.6	1247.7	1235.0
25°	1251.3	1244.0	1224.1	1180.5	1147.8
27.5°	1195.0	1184.1	1162.3	1100.6	1062.4
30°	1133.3	1127.8	1096.9	1017.0	988.0
32.5°	1075.1	1066.1	1033.4	949.8	926.2
35°	1015.2	1007.9	958.9	886.3	864.5
37.5°	955.3	946.2	884.5	826.3	799.1
40°	895.3	884.5	817.3	764.6	735.5
42.5°	839.0	824.5	759.1	702.8	670.2
45°	779.1	762.8	697.4	639.3	613.9
47.5°	719.2	704.7	644.7	584.8	555.7
50°	655.6	642.9	588.4	528.5	497.6
52.5°	603.0	583.0	530.3	470.4	445.0
55°	541.2	524.9	475.8	419.5	397.7
57.5°	484.9	468.6	423.2	370.5	352.3
60°	432.2	408.6	370.5	325.1	310.6
62.5°	374.1	356.0	323.3	285.1	303.3
65°	321.5	303.3	274.2	279.7	232.5
67.5°	263.3	254.3	228.8	203.4	196.1
70°	214.3	203.4	194.3	167.1	159.8
72.5°	170.7	159.8	147.1	132.6	127.1
75°	128.9	119.9	112.6	107.2	118.0
77.5°	89.0	85.4	79.9	74.5	72.6
80°	58.1	56.3	54.5	52.7	50.9
82.5°	34.5	34.5	34.5	34.5	34.5
85°	18.2	20.0	21.8	23.6	25.4
87.5°	10.9	10.9	12.7	14.5	16.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)