

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: P561255

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561255  
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-12-4-LD4-1STD-40-UNV-93-87-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

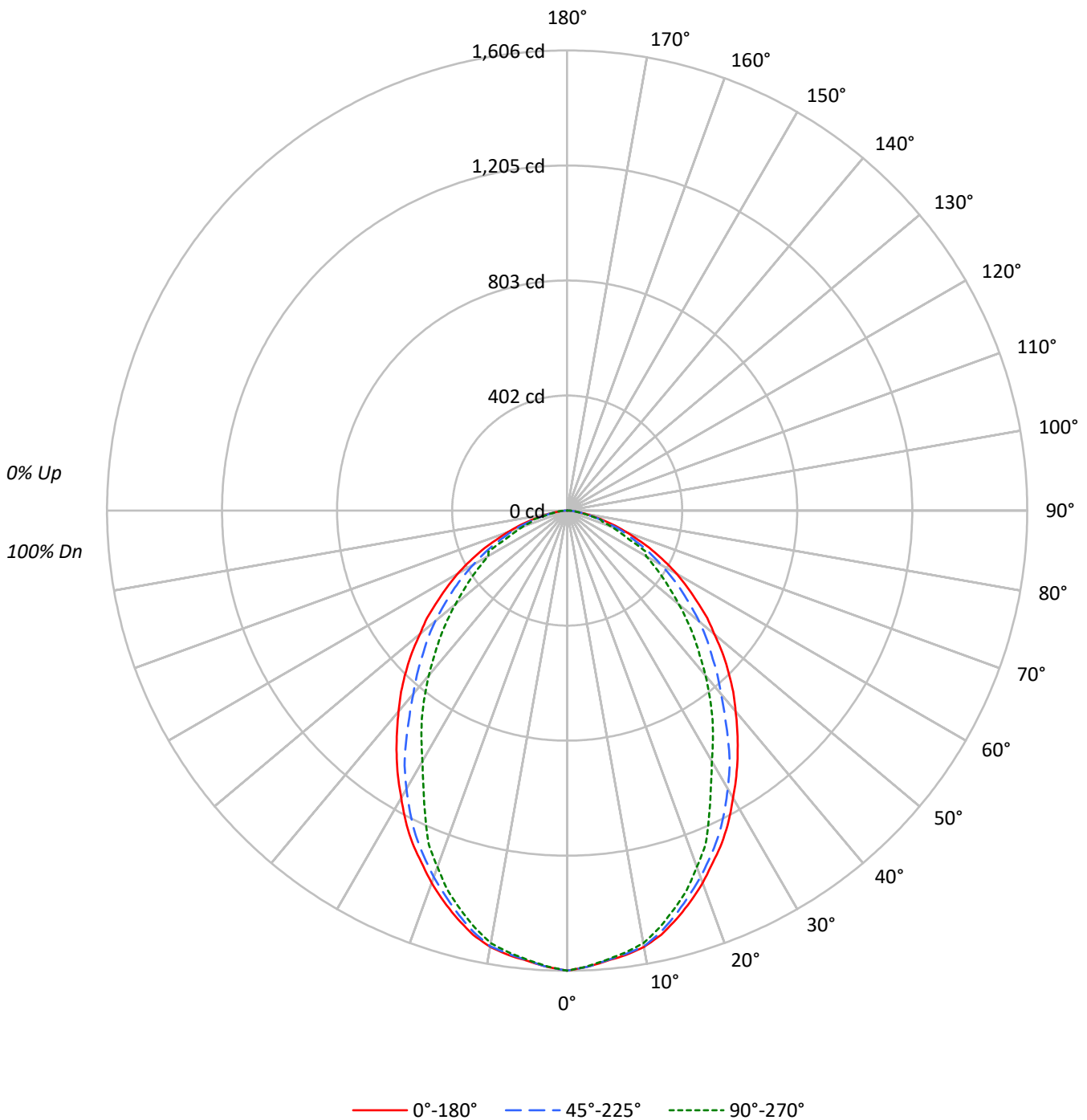
Lumens per Lamp: N/A  
Luminaire Lumens: 3152.0 lumens  
Efficiency: N/A  
Efficacy: 94.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4321	4321	4321
5°	4262	4257	4252
10°	4225	4220	4189
15°	4111	4070	4013
20°	3960	3896	3790
25°	3797	3715	3483
30°	3599	3484	3138
35°	3409	3220	2902
40°	3215	2934	2641
45°	3030	2713	2388
50°	2805	2518	2129
55°	2595	2282	1907
60°	2378	2038	1708
65°	2092	1785	1513
70°	1723	1563	1285
75°	1370	1197	1255
80°	921	863	806
85°	574	689	803

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3030 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.5	4.7
10°-20°	410.2	13.0
20°-30°	567.9	18.0
30°-40°	605.5	19.2
40°-50°	552.4	17.5
50°-60°	432.8	13.7
60°-70°	282.1	8.9
70°-80°	125.0	4.0
80°-90°	26.8	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°	1127.5	35.8
0°-40°	1733.0	55.0
0°-60°	2718.2	86.2
0°-90°	3152.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3152.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1606	1606	1606	1606	1606	
5°	1578	1576	1576	1574	1574	150
15°	1476	1476	1461	1446	1440	415
25°	1279	1272	1251	1206	1173	587
35°	1038	1030	980	906	884	649
45°	796	780	713	653	627	613
55°	553	536	486	429	406	496
65°	328	310	280	286	238	324
75°	132	122	115	110	121	141
85°	19	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°	1605.6	1605.6	1605.6	1605.6	1605.6
2.5°	1594.4	1594.4	1594.4	1592.6	1592.6
5°	1577.7	1575.9	1575.9	1574.0	1574.0
7.5°	1564.8	1562.9	1561.0	1559.2	1555.5
10°	1546.2	1546.2	1544.3	1535.1	1533.2
12.5°	1516.5	1514.6	1507.2	1494.2	1490.5
15°	1475.7	1475.7	1460.8	1446.0	1440.4
17.5°	1431.1	1429.3	1410.7	1395.8	1388.4
20°	1382.8	1379.1	1360.6	1336.4	1323.4
22.5°	1329.0	1329.0	1306.7	1275.2	1262.2
25°	1278.9	1271.5	1251.1	1206.5	1173.1
27.5°	1221.4	1210.2	1187.9	1124.8	1085.9
30°	1158.2	1152.7	1121.1	1039.5	1009.8
32.5°	1098.9	1089.6	1056.2	970.8	946.6
35°	1037.6	1030.2	980.1	905.8	883.5
37.5°	976.3	967.1	904.0	844.6	816.7
40°	915.1	904.0	835.3	781.4	751.7
42.5°	857.6	842.7	775.9	718.3	684.9
45°	796.3	779.6	712.8	653.4	627.4
47.5°	735.0	720.2	658.9	597.7	568.0
50°	670.1	657.1	601.4	540.1	508.6
52.5°	616.2	595.8	542.0	480.7	454.8
55°	553.1	536.4	486.3	428.8	406.5
57.5°	495.6	478.9	432.5	378.7	360.1
60°	441.8	417.6	378.7	332.3	317.4
62.5°	382.4	363.8	330.4	291.4	310.0
65°	328.5	310.0	280.3	285.9	237.6
67.5°	269.1	259.9	233.9	207.9	200.5
70°	219.0	207.9	198.6	170.8	163.3
72.5°	174.5	163.3	150.3	135.5	129.9
75°	131.8	122.5	115.1	109.5	120.7
77.5°	91.0	87.2	81.7	76.1	74.2
80°	59.4	57.5	55.7	53.8	52.0
82.5°	35.3	35.3	35.3	35.3	35.3
85°	18.6	20.4	22.3	24.1	26.0
87.5°	11.1	11.1	13.0	14.8	16.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)