

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: P561166

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-81-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561166  
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-35-UNV-81-97-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

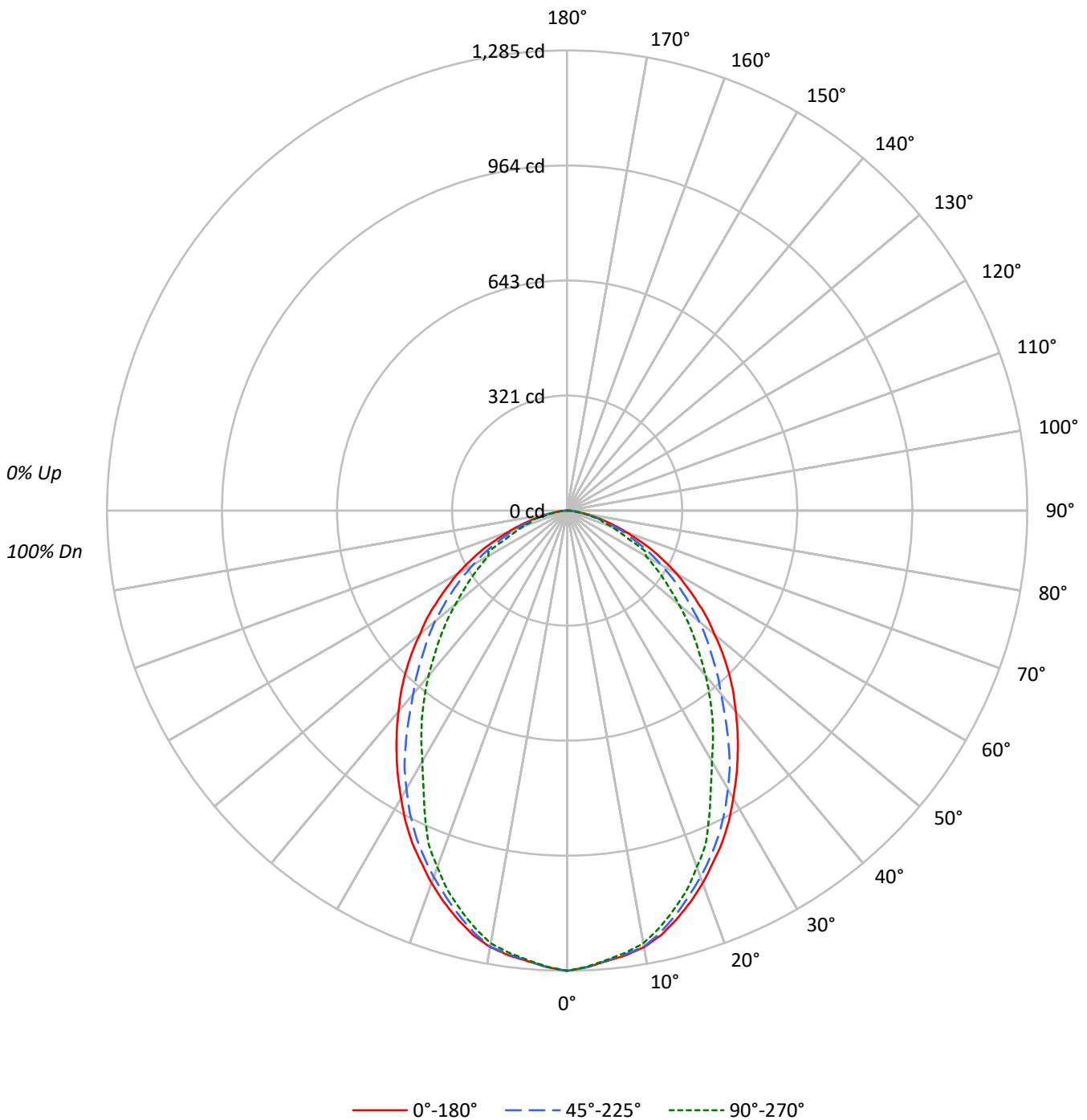
Lumens per Lamp: N/A  
Luminaire Lumens: 2523.0 lumens  
Efficiency: N/A  
Efficacy: 75.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	3458	3458	3458
5°	3411	3407	3403
10°	3382	3378	3353
15°	3291	3258	3212
20°	3170	3119	3033
25°	3040	2973	2788
30°	2881	2788	2512
35°	2728	2577	2323
40°	2573	2349	2114
45°	2426	2171	1911
50°	2246	2015	1704
55°	2077	1826	1527
60°	1903	1631	1368
65°	1675	1428	1211
70°	1379	1251	1028
75°	1097	958	1004
80°	736	691	645
85°	460	550	642

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2426 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	119.6	4.7
10°-20°	328.3	13.0
20°-30°	454.5	18.0
30°-40°	484.7	19.2
40°-50°	442.2	17.5
50°-60°	346.4	13.7
60°-70°	225.8	8.9
70°-80°	100.0	4.0
80°-90°	21.5	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°	902.5	35.8
0°-40°	1387.2	55.0
0°-60°	2175.7	86.2
0°-90°	2523.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2523.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1285	1285	1285	1285	1285	
5°	1263	1261	1261	1260	1260	120
15°	1181	1181	1169	1157	1153	332
25°	1024	1018	1001	966	939	470
35°	830	825	784	725	707	519
45°	637	624	570	523	502	491
55°	443	429	389	343	325	397
65°	263	248	224	229	190	259
75°	106	98	92	88	97	113
85°	15	16	18	19	21	21
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1285.2	1285.2	1285.2	1285.2	1285.2
2.5°	1276.3	1276.3	1276.3	1274.8	1274.8
5°	1262.9	1261.4	1261.4	1259.9	1259.9
7.5°	1252.5	1251.0	1249.5	1248.0	1245.1
10°	1237.6	1237.6	1236.2	1228.7	1227.2
12.5°	1213.9	1212.4	1206.4	1196.0	1193.1
15°	1181.2	1181.2	1169.3	1157.4	1152.9
17.5°	1145.5	1144.0	1129.2	1117.3	1111.3
20°	1106.9	1103.9	1089.1	1069.7	1059.3
22.5°	1063.8	1063.8	1046.0	1020.7	1010.3
25°	1023.7	1017.7	1001.4	965.7	939.0
27.5°	977.6	968.7	950.9	900.4	869.2
30°	927.1	922.7	897.4	832.0	808.3
32.5°	879.6	872.1	845.4	777.1	757.7
35°	830.5	824.6	784.5	725.1	707.2
37.5°	781.5	774.1	723.6	676.0	653.7
40°	732.5	723.6	668.6	625.5	601.7
42.5°	686.4	674.5	621.0	575.0	548.2
45°	637.4	624.0	570.5	523.0	502.2
47.5°	588.4	576.5	527.4	478.4	454.6
50°	536.4	526.0	481.4	432.4	407.1
52.5°	493.3	476.9	433.8	384.8	364.0
55°	442.8	429.4	389.3	343.2	325.4
57.5°	396.7	383.3	346.2	303.1	288.2
60°	353.6	334.3	303.1	266.0	254.1
62.5°	306.1	291.2	264.5	233.3	248.1
65°	263.0	248.1	224.3	228.8	190.2
67.5°	215.4	208.0	187.2	166.4	160.5
70°	175.3	166.4	159.0	136.7	130.7
72.5°	139.7	130.7	120.3	108.5	104.0
75°	105.5	98.1	92.1	87.7	96.6
77.5°	72.8	69.8	65.4	60.9	59.4
80°	47.5	46.1	44.6	43.1	41.6
82.5°	28.2	28.2	28.2	28.2	28.2
85°	14.9	16.3	17.8	19.3	20.8
87.5°	8.9	8.9	10.4	11.9	13.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)