

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: P561256

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-93-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561256  
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-93-88-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

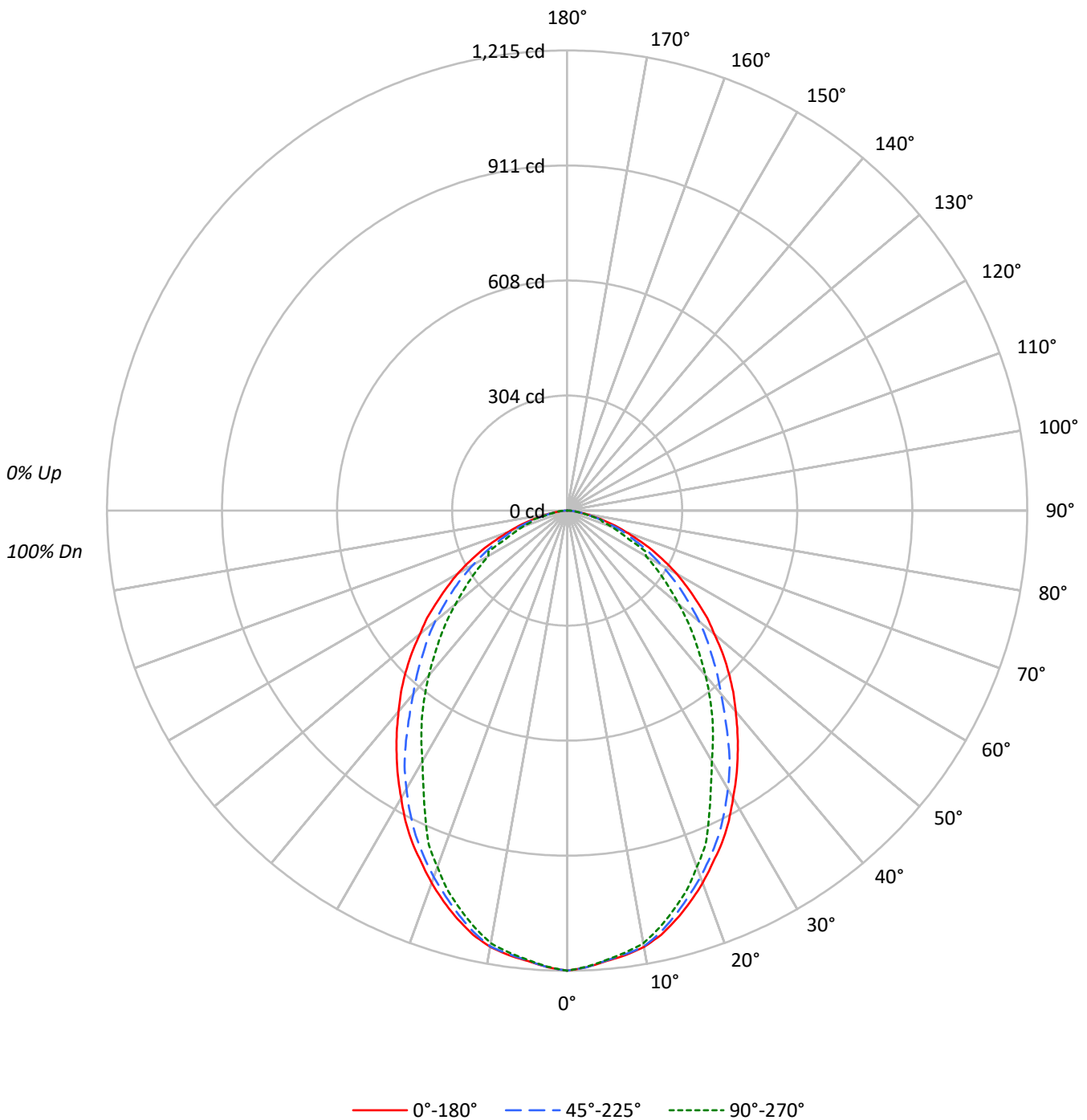
Lumens per Lamp: N/A  
Luminaire Lumens: 2385.0 lumens  
Efficiency: N/A  
Efficacy: 71.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3269	3269	3269
5°	3225	3221	3217
10°	3197	3193	3170
15°	3111	3079	3036
20°	2996	2948	2868
25°	2873	2811	2635
30°	2723	2636	2374
35°	2579	2436	2196
40°	2432	2220	1998
45°	2293	2052	1807
50°	2123	1905	1611
55°	1963	1727	1443
60°	1799	1542	1293
65°	1583	1351	1145
70°	1304	1183	972
75°	1037	906	949
80°	696	652	609
85°	432	522	608

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2293 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	113.1	4.7
10°-20°	310.4	13.0
20°-30°	429.7	18.0
30°-40°	458.2	19.2
40°-50°	418.0	17.5
50°-60°	327.5	13.7
60°-70°	213.4	8.9
70°-80°	94.6	4.0
80°-90°	20.3	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°	853.1	35.8
0°-40°	1311.3	55.0
0°-60°	2056.7	86.2
0°-90°	2385.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2385.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1215	1215	1215	1215	1215	
5°	1194	1192	1192	1191	1191	113
15°	1117	1117	1105	1094	1090	314
25°	968	962	947	913	888	444
35°	785	780	742	685	668	491
45°	602	590	539	494	475	464
55°	418	406	368	324	308	375
65°	249	235	212	216	180	245
75°	100	93	87	83	91	107
85°	14	15	17	18	20	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1214.9	1214.9	1214.9	1214.9	1214.9
2.5°	1206.5	1206.5	1206.5	1205.1	1205.1
5°	1193.8	1192.4	1192.4	1191.0	1191.0
7.5°	1184.0	1182.6	1181.2	1179.8	1177.0
10°	1169.9	1169.9	1168.5	1161.5	1160.1
12.5°	1147.5	1146.1	1140.4	1130.6	1127.8
15°	1116.6	1116.6	1105.3	1094.1	1089.9
17.5°	1082.9	1081.5	1067.4	1056.2	1050.6
20°	1046.3	1043.5	1029.5	1011.2	1001.4
22.5°	1005.6	1005.6	988.8	964.9	955.1
25°	967.7	962.1	946.6	912.9	887.6
27.5°	924.2	915.7	898.9	851.1	821.6
30°	876.4	872.2	848.3	786.5	764.0
32.5°	831.5	824.4	799.2	734.6	716.3
35°	785.1	779.5	741.6	685.4	668.5
37.5°	738.8	731.7	684.0	639.0	618.0
40°	692.4	684.0	632.0	591.3	568.8
42.5°	648.9	637.6	587.1	543.5	518.3
45°	602.5	589.9	539.3	494.4	474.7
47.5°	556.2	544.9	498.6	452.2	429.8
50°	507.0	497.2	455.1	408.7	384.8
52.5°	466.3	450.8	410.1	363.8	344.1
55°	418.5	405.9	368.0	324.4	307.6
57.5°	375.0	362.4	327.2	286.5	272.5
60°	334.3	316.0	286.5	251.4	240.2
62.5°	289.3	275.3	250.0	220.5	234.6
65°	248.6	234.6	212.1	216.3	179.8
67.5°	203.7	196.6	177.0	157.3	151.7
70°	165.7	157.3	150.3	129.2	123.6
72.5°	132.0	123.6	113.8	102.5	98.3
75°	99.7	92.7	87.1	82.9	91.3
77.5°	68.8	66.0	61.8	57.6	56.2
80°	44.9	43.5	42.1	40.7	39.3
82.5°	26.7	26.7	26.7	26.7	26.7
85°	14.0	15.4	16.9	18.3	19.7
87.5°	8.4	8.4	9.8	11.2	12.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)