

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: P560616

Luminaire Tested: FSR-12-2-LD4-2STD-35-UNV-93-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560616  
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-12-2-LD4-2STD-35-UNV-93-88-EDD-90  
Description: 1X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

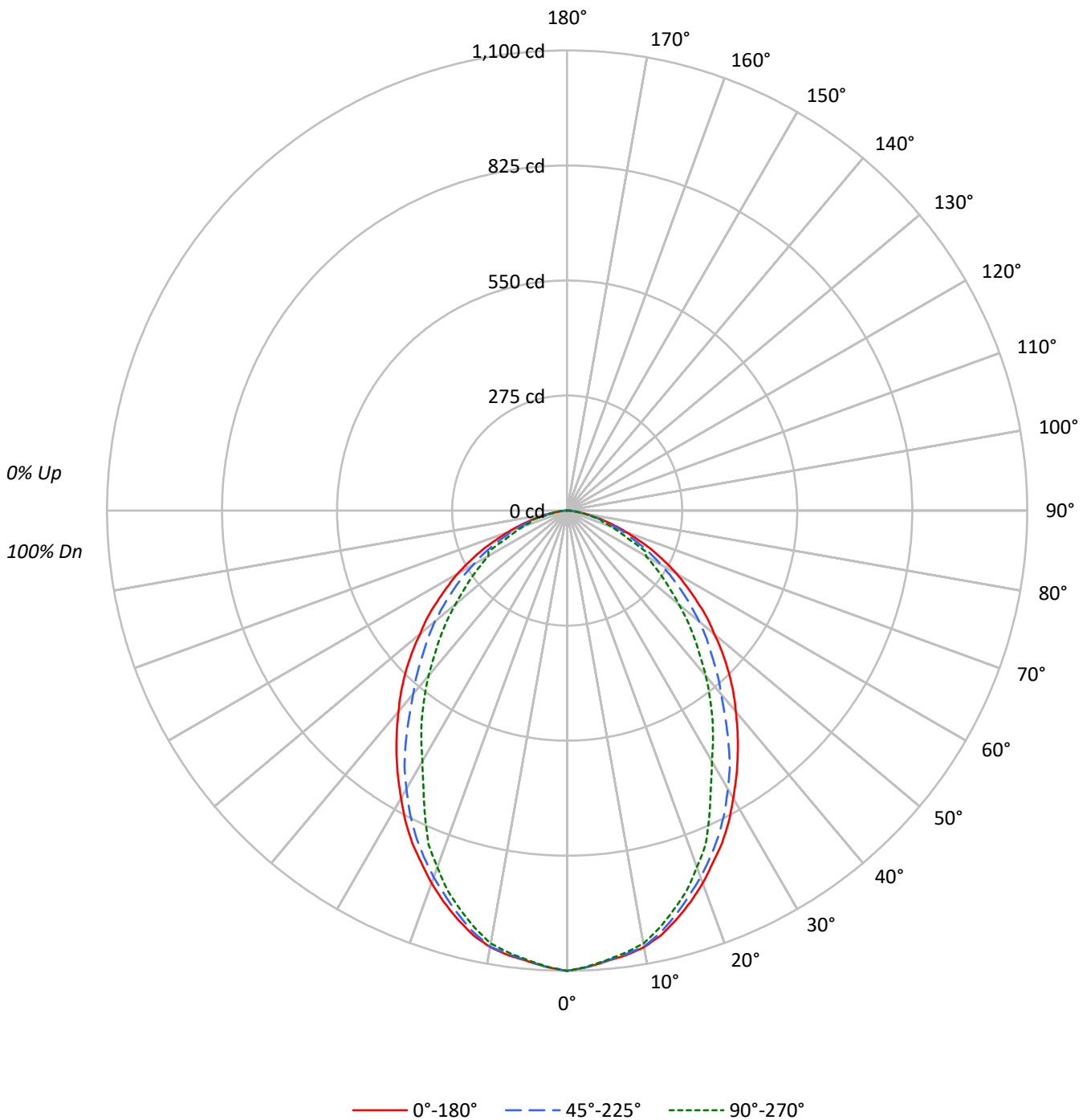
Lumens per Lamp: N/A  
Luminaire Lumens: 2160.0 lumens  
Efficiency: N/A  
Efficacy: 64.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P560616

CATALOG NUMBER: FSR-12-2-LD4-2STD-35-UNV-93-88-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P560616

CATALOG NUMBER: FSR-12-2-LD4-2STD-35-UNV-93-88-EDD-90

**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°	5922	5922	5922
5°	5841	5834	5828
10°	5791	5784	5742
15°	5634	5578	5500
20°	5427	5340	5194
25°	5204	5091	4774
30°	4932	4775	4300
35°	4671	4413	3978
40°	4406	4021	3620
45°	4153	3717	3272
50°	3845	3450	2918
55°	3557	3127	2614
60°	3258	2793	2341
65°	2867	2446	2073
70°	2362	2142	1761
75°	1878	1641	1720
80°	1261	1184	1103
85°	784	945	1099

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4153 cd/sqm



TEST NUMBER: P560616

CATALOG NUMBER: FSR-12-2-LD4-2STD-35-UNV-93-88-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.4	4.7
10°-20°	281.1	13.0
20°-30°	389.1	18.0
30°-40°	414.9	19.2
40°-50°	378.5	17.5
50°-60°	296.6	13.7
60°-70°	193.3	8.9
70°-80°	85.6	4.0
80°-90°	18.4	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°	772.6	35.8
0°-40°	1187.6	55.0
0°-60°	1862.7	86.2
0°-90°	2160.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2160.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1100	1100	1100	1100	1100	
5°	1081	1080	1080	1079	1079	103
15°	1011	1011	1001	991	987	284
25°	876	871	857	827	804	402
35°	711	706	672	621	606	445
45°	546	534	488	448	430	420
55°	379	368	333	294	279	340
65°	225	212	192	196	163	222
75°	90	84	79	75	83	97
85°	13	14	15	16	18	18
90°	0	0	0	0	0	



TEST NUMBER: P560616

CATALOG NUMBER: FSR-12-2-LD4-2STD-35-UNV-93-88-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1100.3	1100.3	1100.3	1100.3	1100.3
2.5°	1092.6	1092.6	1092.6	1091.4	1091.4
5°	1081.2	1079.9	1079.9	1078.7	1078.7
7.5°	1072.3	1071.0	1069.7	1068.5	1065.9
10°	1059.6	1059.6	1058.3	1051.9	1050.7
12.5°	1039.2	1037.9	1032.9	1024.0	1021.4
15°	1011.2	1011.2	1001.1	990.9	987.1
17.5°	980.7	979.4	966.7	956.5	951.5
20°	947.6	945.1	932.4	915.8	906.9
22.5°	910.7	910.7	895.5	873.9	865.0
25°	876.4	871.3	857.3	826.8	803.9
27.5°	837.0	829.3	814.1	770.8	744.1
30°	793.7	789.9	768.3	712.3	692.0
32.5°	753.0	746.7	723.8	665.3	648.7
35°	711.0	706.0	671.6	620.7	605.5
37.5°	669.1	662.7	619.5	578.8	559.7
40°	627.1	619.5	572.4	535.5	515.2
42.5°	587.7	577.5	531.7	492.3	469.4
45°	545.7	534.2	488.4	447.7	429.9
47.5°	503.7	493.5	451.6	409.6	389.2
50°	459.2	450.3	412.1	370.2	348.5
52.5°	422.3	408.3	371.4	329.4	311.6
55°	379.1	367.6	333.3	293.8	278.6
57.5°	339.6	328.2	296.4	259.5	246.8
60°	302.7	286.2	259.5	227.7	217.5
62.5°	262.0	249.3	226.4	199.7	212.4
65°	225.1	212.4	192.1	195.9	162.8
67.5°	184.4	178.1	160.3	142.5	137.4
70°	150.1	142.5	136.1	117.0	111.9
72.5°	119.6	111.9	103.0	92.9	89.0
75°	90.3	84.0	78.9	75.0	82.7
77.5°	62.3	59.8	56.0	52.2	50.9
80°	40.7	39.4	38.2	36.9	35.6
82.5°	24.2	24.2	24.2	24.2	24.2
85°	12.7	14.0	15.3	16.5	17.8
87.5°	7.6	7.6	8.9	10.2	11.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)