

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: P559718

Luminaire Tested: FSR-12-2-LD4-1HI-40-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P559718  
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-LD4-1HI-40-UNV-93-87-EDD-90  
Description: 1X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

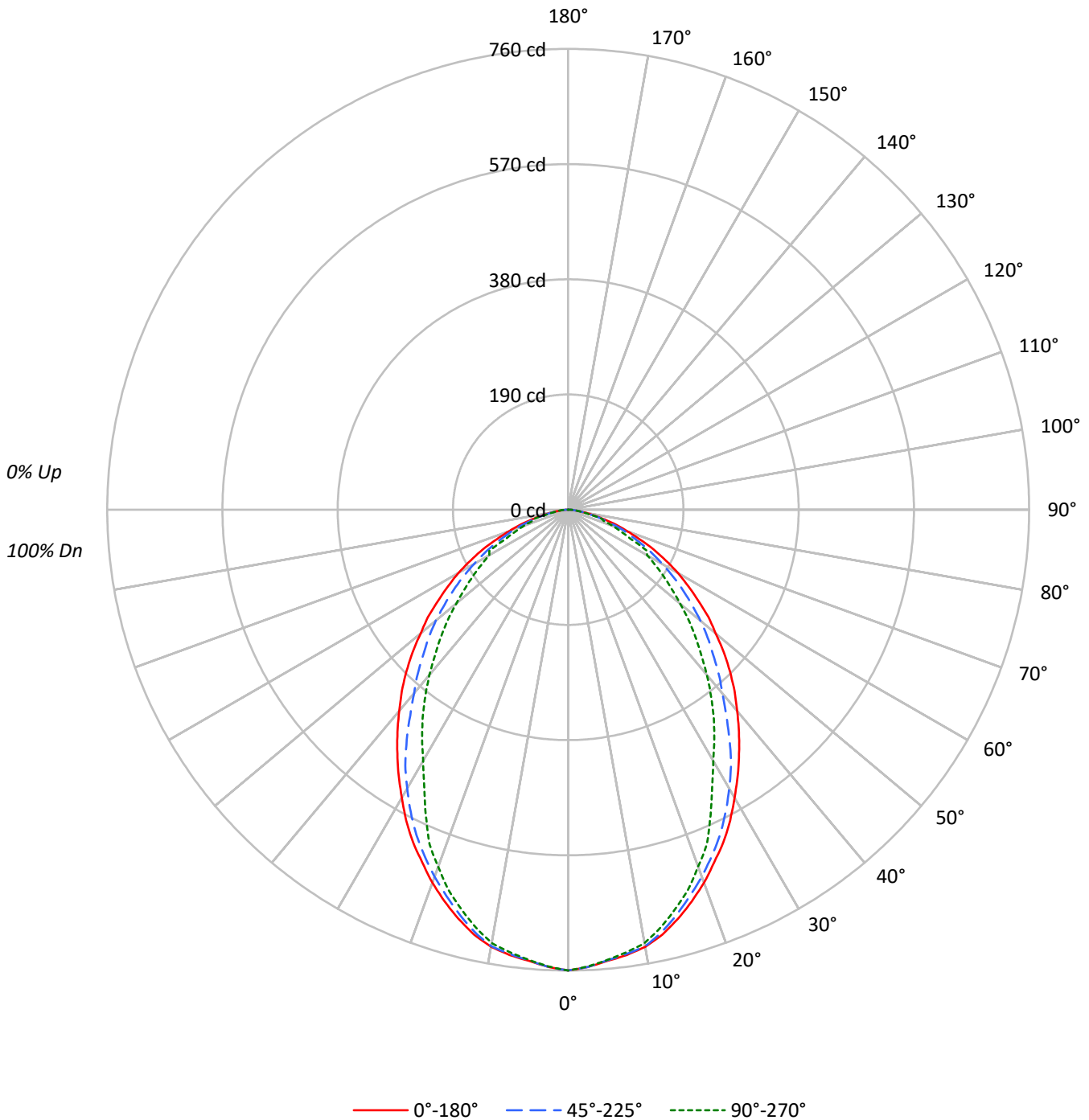
Lumens per Lamp: N/A  
Luminaire Lumens: 1492.0 lumens  
Efficiency: N/A  
Efficacy: 69.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P559718

CATALOG NUMBER: FSR-12-2-LD4-1HI-40-UNV-93-87-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P559718

CATALOG NUMBER: FSR-12-2-LD4-1HI-40-UNV-93-87-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	50	30	10	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4090	4090	4090
5°	4035	4030	4025
10°	4000	3995	3966
15°	3892	3853	3799
20°	3749	3688	3588
25°	3595	3517	3298
30°	3407	3298	2971
35°	3227	3048	2748
40°	3044	2778	2500
45°	2869	2568	2261
50°	2656	2384	2015
55°	2457	2160	1805
60°	2251	1929	1617
65°	1980	1690	1433
70°	1632	1479	1216
75°	1298	1133	1187
80°	871	818	762
85°	543	648	760

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2869 cd/sqm



TEST NUMBER: P559718

CATALOG NUMBER: FSR-12-2-LD4-1HI-40-UNV-93-87-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	70.7	4.7
10°-20°	194.2	13.0
20°-30°	268.8	18.0
30°-40°	286.6	19.2
40°-50°	261.5	17.5
50°-60°	204.8	13.7
60°-70°	133.5	8.9
70°-80°	59.1	4.0
80°-90°	12.7	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°	533.7	35.8
0°-40°	820.3	55.0
0°-60°	1286.6	86.2
0°-90°	1492.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1492.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	760	760	760	760	760	
5°	747	746	746	745	745	71
15°	698	698	692	684	682	196
25°	605	602	592	571	555	278
35°	491	488	464	429	418	307
45°	377	369	337	309	297	290
55°	262	254	230	203	192	235
65°	156	147	133	135	112	153
75°	62	58	54	52	57	67
85°	9	10	10	11	12	12
90°	0	0	0	0	0	



TEST NUMBER: P559718

CATALOG NUMBER: FSR-12-2-LD4-1HI-40-UNV-93-87-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	760.0	760.0	760.0	760.0	760.0
2.5°	754.7	754.7	754.7	753.9	753.9
5°	746.8	745.9	745.9	745.1	745.1
7.5°	740.7	739.8	738.9	738.0	736.3
10°	731.9	731.9	731.0	726.6	725.7
12.5°	717.8	717.0	713.4	707.3	705.5
15°	698.5	698.5	691.5	684.4	681.8
17.5°	677.4	676.5	667.7	660.7	657.2
20°	654.6	652.8	644.0	632.6	626.5
22.5°	629.1	629.1	618.5	603.6	597.5
25°	605.4	601.9	592.2	571.1	555.3
27.5°	578.1	572.9	562.3	532.4	514.0
30°	548.3	545.6	530.7	492.0	478.0
32.5°	520.1	515.7	499.9	459.5	448.1
35°	491.1	487.6	463.9	428.8	418.2
37.5°	462.2	457.8	427.9	399.8	386.6
40°	433.2	427.9	395.4	369.9	355.8
42.5°	405.9	398.9	367.3	340.0	324.2
45°	376.9	369.0	337.4	309.3	297.0
47.5°	347.9	340.9	311.9	282.9	268.9
50°	317.2	311.0	284.7	255.7	240.7
52.5°	291.7	282.0	256.6	227.6	215.3
55°	261.8	253.9	230.2	203.0	192.4
57.5°	234.6	226.7	204.7	179.2	170.5
60°	209.1	197.7	179.2	157.3	150.2
62.5°	181.0	172.2	156.4	137.9	146.7
65°	155.5	146.7	132.7	135.3	112.5
67.5°	127.4	123.0	110.7	98.4	94.9
70°	103.7	98.4	94.0	80.8	77.3
72.5°	82.6	77.3	71.2	64.1	61.5
75°	62.4	58.0	54.5	51.8	57.1
77.5°	43.1	41.3	38.7	36.0	35.1
80°	28.1	27.2	26.4	25.5	24.6
82.5°	16.7	16.7	16.7	16.7	16.7
85°	8.8	9.7	10.5	11.4	12.3
87.5°	5.3	5.3	6.2	7.0	7.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)