

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: P559111

Luminaire Tested: FSR-12-1-LD4-2HI-40-UNV-81-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P559111  
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-12-1-LD4-2HI-40-UNV-81-87-EDD  
Description: 1X1 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

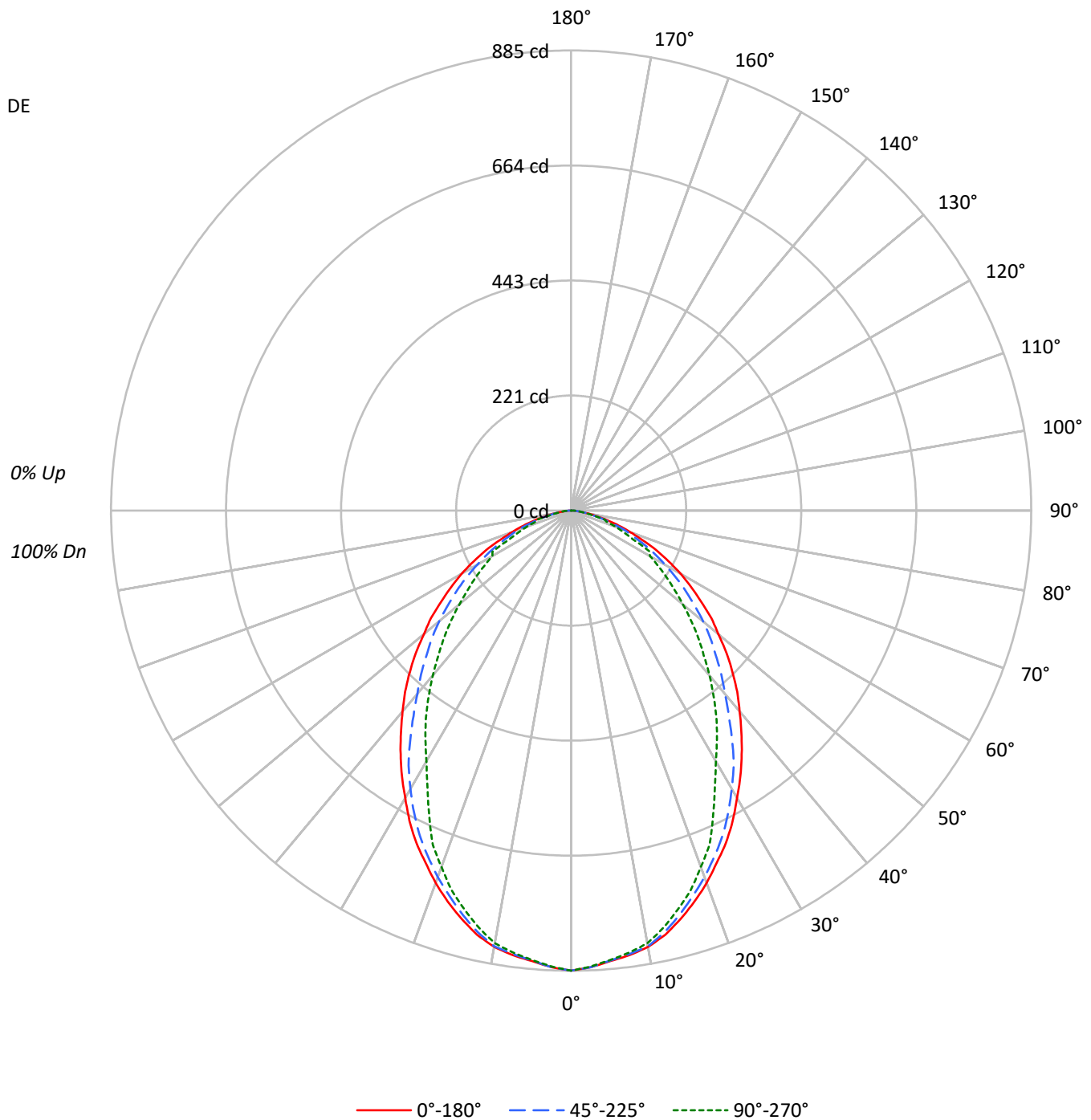
Lumens per Lamp: N/A  
Luminaire Lumens: 1737.0 lumens  
Efficiency: N/A  
Efficacy: 80.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P559111

CATALOG NUMBER: FSR-12-1-LD4-2HI-40-UNV-81-87-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P559111

CATALOG NUMBER: FSR-12-1-LD4-2HI-40-UNV-81-87-EDD

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

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

	0°	45°	90°
0°	9524	9524	9524
5°	9395	9383	9372
10°	9313	9301	9235
15°	9062	8971	8846
20°	8730	8589	8354
25°	8371	8188	7678
30°	7933	7679	6917
35°	7514	7097	6398
40°	7086	6468	5821
45°	6680	5979	5262
50°	6184	5550	4694
55°	5720	5029	4204
60°	5240	4493	3765
65°	4613	3935	3334
70°	3799	3443	2832
75°	3019	2637	2766
80°	2027	1903	1773
85°	1260	1519	1766

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6680 cd/sqm



TEST NUMBER: P559111

CATALOG NUMBER: FSR-12-1-LD4-2HI-40-UNV-81-87-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	82.4	4.7
10°-20°	226.0	13.0
20°-30°	312.9	18.0
30°-40°	333.7	19.2
40°-50°	304.4	17.5
50°-60°	238.5	13.7
60°-70°	155.4	8.9
70°-80°	68.9	4.0
80°-90°	14.8	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°	621.3	35.8
0°-40°	955.0	55.0
0°-60°	1497.9	86.2
0°-90°	1737.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1737.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	885	885	885	885	885	
5°	870	868	868	867	867	83
15°	813	813	805	797	794	229
25°	705	701	689	665	646	324
35°	572	568	540	499	487	357
45°	439	430	393	360	346	338
55°	305	296	268	236	224	273
65°	181	171	154	158	131	178
75°	73	68	63	60	66	78
85°	10	11	12	13	14	14
90°	0	0	0	0	0	



TEST NUMBER: P559111

CATALOG NUMBER: FSR-12-1-LD4-2HI-40-UNV-81-87-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	884.8	884.8	884.8	884.8	884.8
2.5°	878.7	878.7	878.7	877.6	877.6
5°	869.5	868.4	868.4	867.4	867.4
7.5°	862.3	861.3	860.3	859.2	857.2
10°	852.1	852.1	851.0	845.9	844.9
12.5°	835.7	834.7	830.6	823.4	821.4
15°	813.2	813.2	805.0	796.8	793.8
17.5°	788.7	787.6	777.4	769.2	765.1
20°	762.1	760.0	749.8	736.5	729.3
22.5°	732.4	732.4	720.1	702.7	695.6
25°	704.8	700.7	689.4	664.9	646.5
27.5°	673.1	666.9	654.7	619.9	598.4
30°	638.3	635.2	617.8	572.8	556.5
32.5°	605.6	600.4	582.0	535.0	521.7
35°	571.8	567.7	540.1	499.2	486.9
37.5°	538.0	532.9	498.2	465.4	450.1
40°	504.3	498.2	460.3	430.6	414.3
42.5°	472.6	464.4	427.6	395.9	377.4
45°	438.8	429.6	392.8	360.1	345.7
47.5°	405.1	396.9	363.1	329.4	313.0
50°	369.3	362.1	331.4	297.7	280.3
52.5°	339.6	328.3	298.7	264.9	250.6
55°	304.8	295.6	268.0	236.3	224.0
57.5°	273.1	263.9	238.3	208.7	198.4
60°	243.4	230.2	208.7	183.1	174.9
62.5°	210.7	200.5	182.1	160.6	170.8
65°	181.1	170.8	154.5	157.5	130.9
67.5°	148.3	143.2	128.9	114.6	110.5
70°	120.7	114.6	109.4	94.1	90.0
72.5°	96.2	90.0	82.9	74.7	71.6
75°	72.6	67.5	63.4	60.4	66.5
77.5°	50.1	48.1	45.0	41.9	40.9
80°	32.7	31.7	30.7	29.7	28.6
82.5°	19.4	19.4	19.4	19.4	19.4
85°	10.2	11.3	12.3	13.3	14.3
87.5°	6.1	6.1	7.2	8.2	9.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)