

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: P590048

Luminaire Tested: FSR-24-2-LD4-1STD-35-UNV-81-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590048  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-1STD-35-UNV-81-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

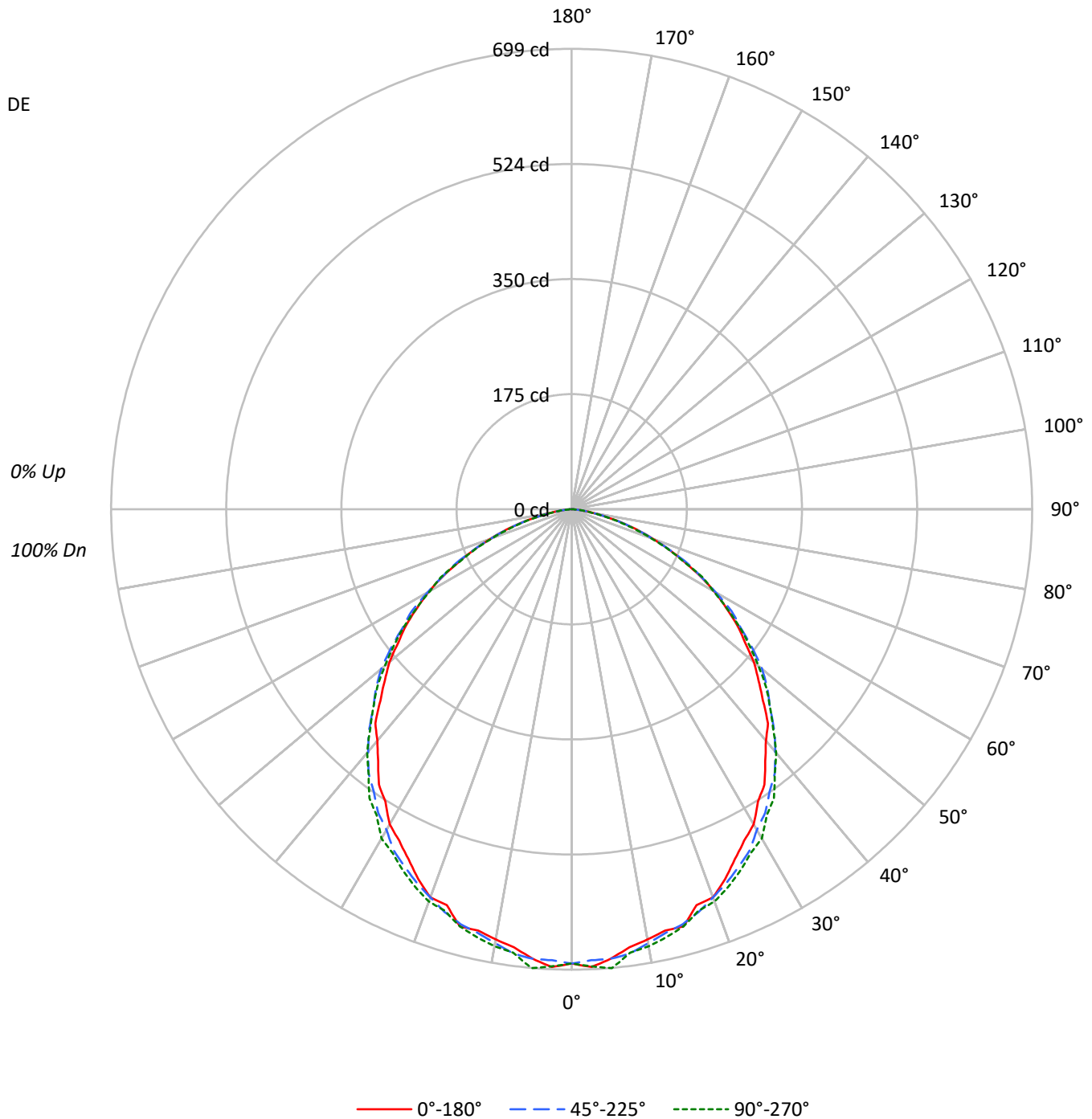
Lumens per Lamp: N/A  
Luminaire Lumens: 1738.0 lumens  
Efficiency: N/A  
Efficacy: 104.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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

	0°	45°	90°
0°	1856	1856	1856
5°	1850	1850	1889
10°	1812	1828	1841
15°	1826	1816	1827
20°	1796	1796	1815
25°	1740	1779	1798
30°	1716	1747	1793
35°	1676	1720	1759
40°	1611	1688	1696
45°	1562	1618	1620
50°	1511	1579	1549
55°	1439	1468	1457
60°	1346	1359	1335
65°	1200	1231	1192
70°	1030	1033	1005
75°	815	814	782
80°	547	532	510
85°	296	293	275

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1659 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	64.9	3.7
10°-20°	183.8	10.6
20°-30°	275.4	15.8
30°-40°	326.4	18.8
40°-50°	327.0	18.8
50°-60°	277.6	16.0
60°-70°	187.2	10.8
70°-80°	82.2	4.7
80°-90°	13.4	0.8
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°	524.1	30.2
0°-40°	850.6	48.9
0°-60°	1455.2	83.7
0°-90°	1738.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1738.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	690	690	690	690	690	
5°	685	683	685	683	699	65
15°	656	648	652	655	656	183
25°	586	589	599	607	606	271
35°	510	512	524	536	535	317
45°	410	418	425	436	426	318
55°	307	305	313	311	311	273
65°	188	186	193	186	187	187
75°	78	77	78	73	75	84
85°	10	9	10	9	9	14
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	689.6	689.6	689.6	689.6	689.6
2.5°	695.6	690.3	685.4	691.1	694.6
5°	684.7	683.1	685.0	682.9	699.4
7.5°	670.6	676.8	680.3	678.1	679.1
10°	663.2	661.0	668.9	674.5	673.7
12.5°	655.1	658.3	658.8	664.8	665.3
15°	655.6	648.0	652.0	655.4	655.7
17.5°	630.1	638.3	641.1	648.8	639.2
20°	627.0	621.0	627.0	634.9	633.7
22.5°	607.9	601.2	614.0	621.0	620.6
25°	586.1	589.3	599.0	606.8	605.5
27.5°	567.1	570.8	584.5	595.3	588.4
30°	552.4	550.5	562.1	571.7	577.1
32.5°	526.1	532.9	546.4	555.9	550.9
35°	510.2	511.7	523.5	535.6	535.3
37.5°	482.3	489.3	506.0	509.4	506.3
40°	458.5	465.6	480.6	484.3	482.8
42.5°	441.0	442.2	455.2	459.3	452.7
45°	410.5	418.1	425.1	436.0	425.7
47.5°	384.5	388.0	403.0	405.9	400.5
50°	360.9	362.1	377.2	373.5	370.0
52.5°	331.2	336.5	344.9	344.2	340.0
55°	306.8	304.8	312.8	310.7	310.6
57.5°	277.5	281.1	287.7	284.3	278.9
60°	250.1	250.2	252.6	248.8	248.1
62.5°	219.6	220.6	221.2	216.4	224.1
65°	188.5	186.0	193.3	185.9	187.2
67.5°	159.9	161.2	160.4	155.8	157.6
70°	130.9	132.5	131.3	126.1	127.7
72.5°	104.4	102.4	103.6	97.1	100.1
75°	78.4	76.8	78.3	72.7	75.2
77.5°	53.4	54.7	53.8	50.8	52.5
80°	35.3	34.3	34.3	32.6	32.9
82.5°	20.6	19.6	19.3	18.8	19.6
85°	9.6	9.3	9.5	9.3	8.9
87.5°	3.5	3.6	3.6	3.4	3.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)