

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: P590087

Luminaire Tested: FSR-24-2-LD4-1STD-40-UNV-82-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590087  
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-40-UNV-82-86-EDD  
Description: 2X2 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

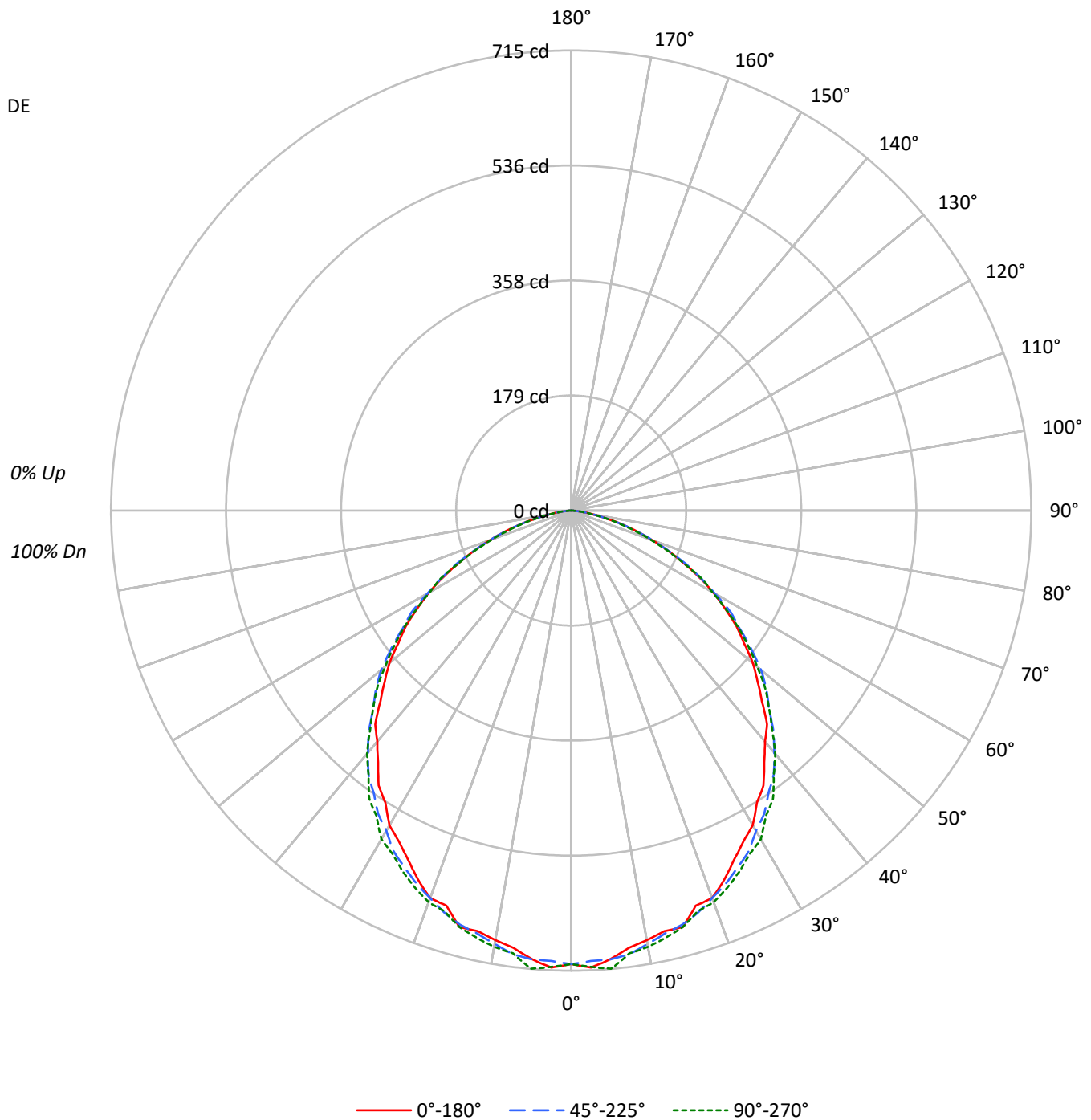
Lumens per Lamp: N/A  
Luminaire Lumens: 1776.0 lumens  
Efficiency: N/A  
Efficacy: 107.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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°	1896	1896	1896
5°	1890	1891	1931
10°	1852	1868	1881
15°	1866	1856	1867
20°	1835	1835	1854
25°	1778	1817	1837
30°	1754	1785	1832
35°	1713	1758	1797
40°	1646	1725	1733
45°	1596	1653	1655
50°	1544	1613	1582
55°	1471	1499	1489
60°	1376	1389	1364
65°	1226	1258	1217
70°	1052	1056	1027
75°	834	832	800
80°	558	542	522
85°	303	299	281

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1695 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	66.3	3.7
10°-20°	187.9	10.6
20°-30°	281.5	15.8
30°-40°	333.6	18.8
40°-50°	334.2	18.8
50°-60°	283.7	16.0
60°-70°	191.3	10.8
70°-80°	84.0	4.7
80°-90°	13.6	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°	535.6	30.2
0°-40°	869.2	48.9
0°-60°	1487.0	83.7
0°-90°	1776.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1776.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	705	705	705	705	705	
5°	700	698	700	698	715	66
15°	670	662	666	670	670	187
25°	599	602	612	620	619	277
35°	521	523	535	547	547	324
45°	419	427	434	446	435	324
55°	314	311	320	317	317	279
65°	193	190	198	190	191	192
75°	80	78	80	74	77	86
85°	10	10	10	10	9	14
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	704.7	704.7	704.7	704.7	704.7
2.5°	710.8	705.4	700.4	706.2	709.8
5°	699.7	698.0	699.9	697.8	714.7
7.5°	685.3	691.6	695.2	692.9	693.9
10°	677.6	675.5	683.6	689.2	688.4
12.5°	669.5	672.7	673.2	679.3	679.8
15°	669.9	662.2	666.3	669.7	670.0
17.5°	643.9	652.3	655.1	663.0	653.2
20°	640.7	634.6	640.7	648.8	647.5
22.5°	621.1	614.3	627.4	634.6	634.2
25°	598.9	602.2	612.1	620.1	618.8
27.5°	579.5	583.3	597.3	608.3	601.2
30°	564.5	562.6	574.4	584.2	589.7
32.5°	537.6	544.5	558.4	568.1	562.9
35°	521.3	522.9	535.0	547.4	547.0
37.5°	492.9	500.0	517.1	520.5	517.3
40°	468.6	475.8	491.1	494.9	493.3
42.5°	450.6	451.9	465.1	469.4	462.6
45°	419.4	427.3	434.4	445.5	435.0
47.5°	392.9	396.5	411.8	414.8	409.2
50°	368.8	370.0	385.4	381.7	378.0
52.5°	338.5	343.8	352.5	351.7	347.5
55°	313.5	311.4	319.6	317.4	317.4
57.5°	283.6	287.2	294.0	290.5	285.0
60°	255.6	255.7	258.1	254.2	253.5
62.5°	224.4	225.5	226.0	221.2	229.0
65°	192.6	190.1	197.5	190.0	191.2
67.5°	163.4	164.7	164.0	159.2	161.0
70°	133.7	135.4	134.2	128.8	130.5
72.5°	106.6	104.6	105.9	99.2	102.3
75°	80.2	78.5	80.0	74.3	76.9
77.5°	54.6	55.9	55.0	52.0	53.7
80°	36.0	35.0	35.0	33.3	33.7
82.5°	21.0	20.0	19.7	19.2	20.0
85°	9.8	9.6	9.7	9.5	9.1
87.5°	3.5	3.6	3.6	3.5	3.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)