

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: P590111

Luminaire Tested: FSR-24-2-LD4-1STD-50-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590111  
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-50-UNV-81-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

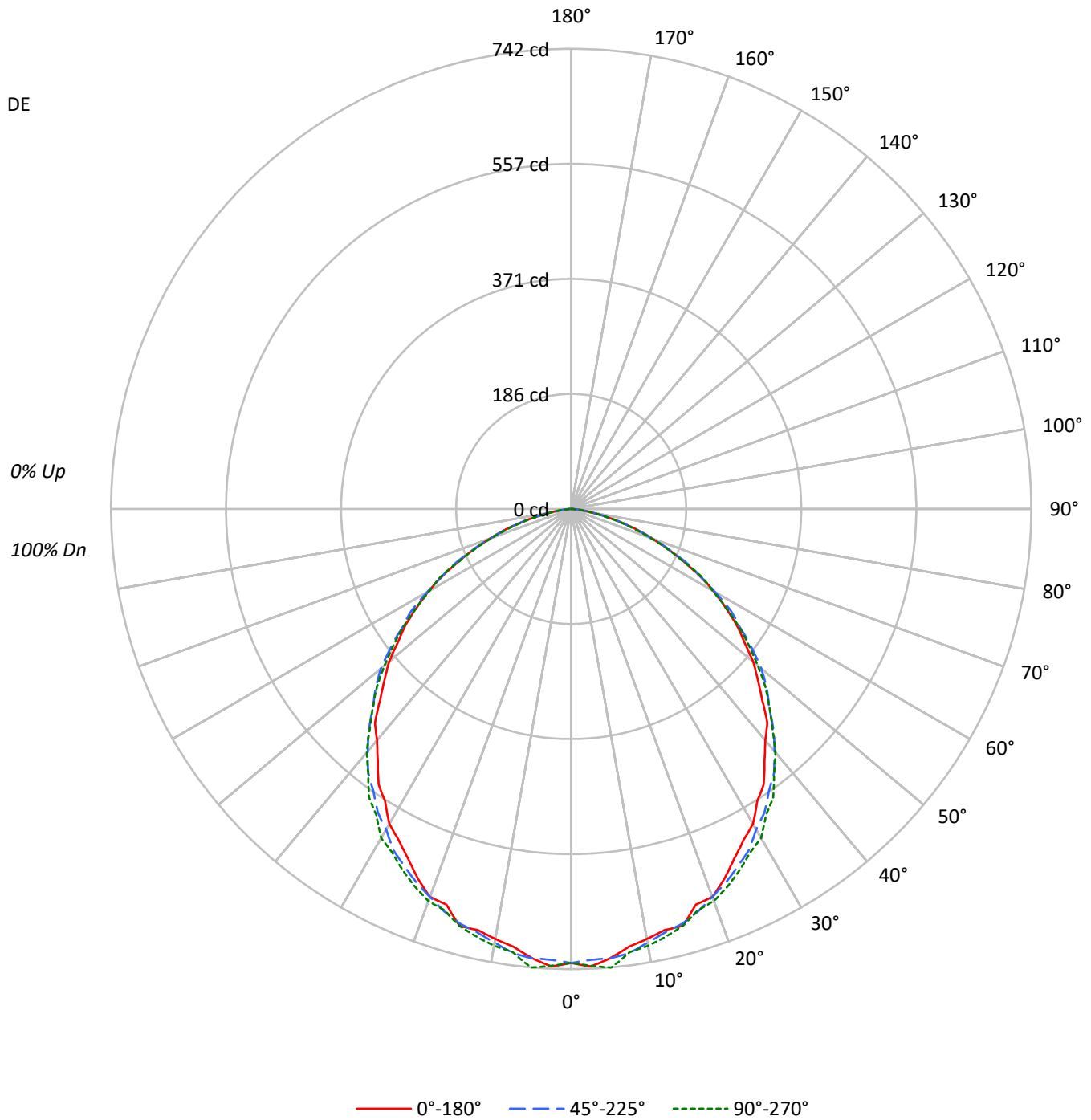
Lumens per Lamp: N/A  
Luminaire Lumens: 1845.0 lumens  
Efficiency: N/A  
Efficacy: 111.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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	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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86					86			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73					73			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62					62			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53					53			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46					46			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41					41			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36					36			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32					32			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29					29			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26					26			

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

	0°	45°	90°
0°	1970	1970	1970
5°	1964	1964	2005
10°	1924	1940	1954
15°	1939	1928	1939
20°	1906	1906	1926
25°	1847	1888	1909
30°	1822	1854	1904
35°	1779	1826	1867
40°	1710	1792	1800
45°	1658	1717	1720
50°	1604	1676	1644
55°	1528	1558	1547
60°	1429	1443	1417
65°	1274	1307	1265
70°	1093	1097	1066
75°	866	864	831
80°	580	564	542
85°	315	312	293

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1762 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	68.9	3.7
10°-20°	195.2	10.6
20°-30°	292.4	15.8
30°-40°	346.5	18.8
40°-50°	347.2	18.8
50°-60°	294.7	16.0
60°-70°	198.7	10.8
70°-80°	87.3	4.7
80°-90°	14.2	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°	556.4	30.2
0°-40°	902.9	48.9
0°-60°	1544.8	83.7
0°-90°	1845.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1845.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	732	732	732	732	732	
5°	727	725	727	725	742	69
15°	696	688	692	696	696	194
25°	622	626	636	644	643	288
35°	542	543	556	569	568	336
45°	436	444	451	463	452	337
55°	326	324	332	330	330	290
65°	200	198	205	197	199	199
75°	83	82	83	77	80	89
85°	10	10	10	10	10	15
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	732.0	732.0	732.0	732.0	732.0
2.5°	738.4	732.8	727.6	733.7	737.3
5°	726.9	725.1	727.1	725.0	742.4
7.5°	711.9	718.4	722.2	719.9	720.9
10°	704.0	701.7	710.1	716.0	715.1
12.5°	695.5	698.9	699.3	705.7	706.2
15°	695.9	687.9	692.2	695.8	696.0
17.5°	668.9	677.6	680.5	688.8	678.6
20°	665.6	659.3	665.6	674.0	672.7
22.5°	645.3	638.2	651.8	659.3	658.8
25°	622.2	625.6	635.8	644.1	642.8
27.5°	602.0	606.0	620.5	632.0	624.6
30°	586.4	584.4	596.7	606.9	612.6
32.5°	558.5	565.7	580.1	590.2	584.8
35°	541.6	543.2	555.8	568.6	568.2
37.5°	512.0	519.5	537.2	540.7	537.4
40°	486.8	494.2	510.2	514.1	512.5
42.5°	468.2	469.5	483.2	487.6	480.5
45°	435.7	443.9	451.2	462.9	451.9
47.5°	408.1	411.9	427.8	430.9	425.1
50°	383.1	384.4	400.4	396.5	392.7
52.5°	351.6	357.2	366.2	365.4	361.0
55°	325.7	323.5	332.0	329.8	329.7
57.5°	294.6	298.4	305.4	301.8	296.0
60°	265.5	265.6	268.2	264.1	263.3
62.5°	233.1	234.2	234.8	229.8	237.9
65°	200.1	197.5	205.2	197.4	198.7
67.5°	169.8	171.1	170.3	165.4	167.3
70°	138.9	140.6	139.4	133.8	135.5
72.5°	110.8	108.7	110.0	103.0	106.2
75°	83.3	81.6	83.1	77.2	79.9
77.5°	56.7	58.0	57.1	54.0	55.8
80°	37.4	36.4	36.4	34.6	35.0
82.5°	21.8	20.8	20.5	19.9	20.8
85°	10.2	9.9	10.1	9.8	9.5
87.5°	3.7	3.8	3.8	3.6	3.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)