

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: P564203

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-93-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564203  
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-24-4-LD4-4STD-50-UNV-93-94-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

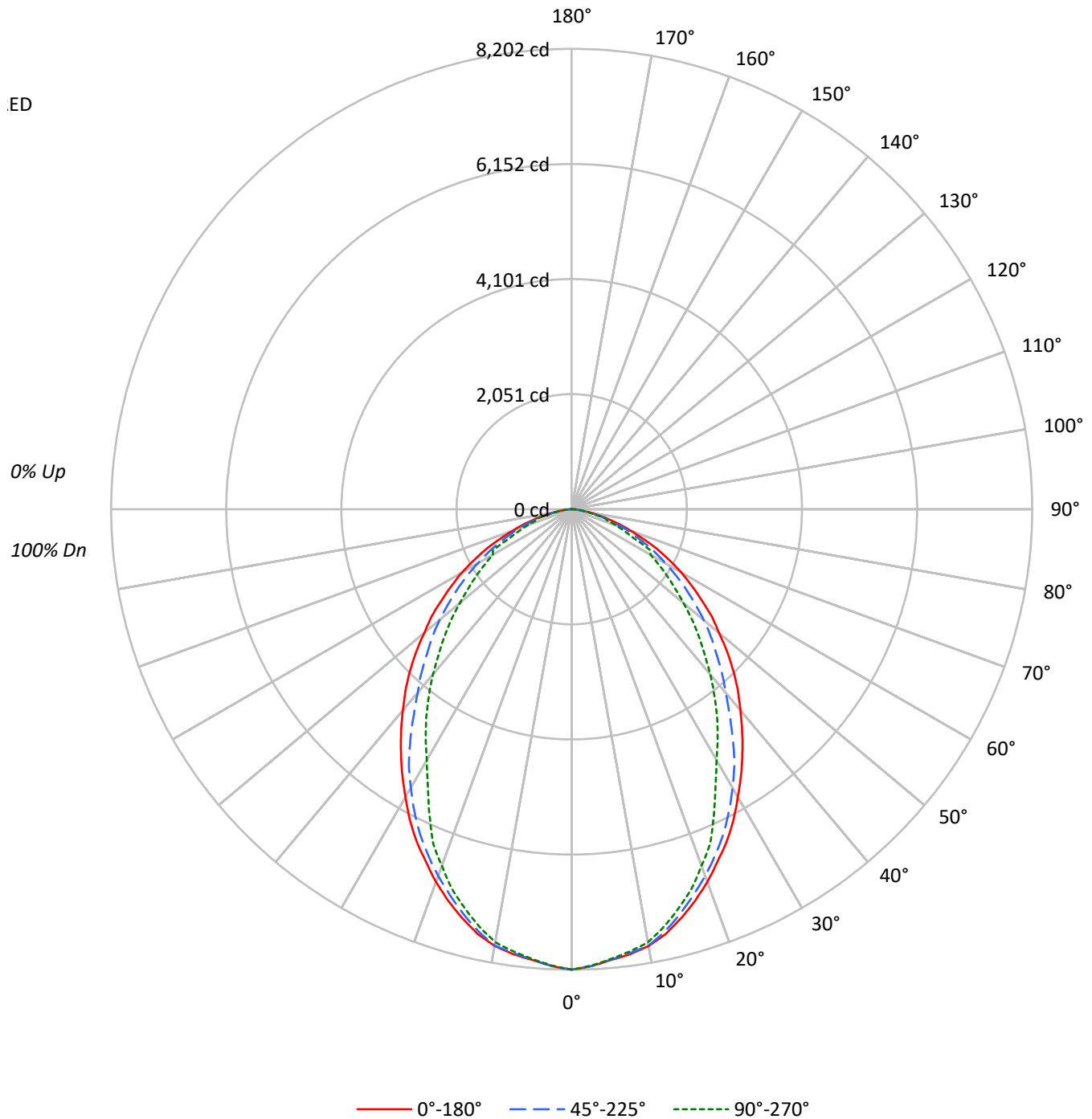
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16102.0 lumens  
Efficiency: N/A  
Efficacy: 120.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87					87			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75					75			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65					65			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56					56			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50					50			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44					44			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40					40			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30					30			

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

	0°	45°	90°
0°	11036	11036	11036
5°	10886	10873	10860
10°	10792	10779	10701
15°	10501	10395	10250
20°	10115	9952	9680
25°	9699	9488	8897
30°	9193	8898	8014
35°	8706	8224	7414
40°	8211	7495	6745
45°	7740	6929	6099
50°	7165	6431	5438
55°	6628	5828	4871
60°	6073	5205	4363
65°	5344	4558	3864
70°	4402	3991	3282
75°	3500	3056	3204
80°	2351	2204	2057
85°	1463	1757	2050

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7740 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	763.5	4.7
10°-20°	2095.4	13.0
20°-30°	2900.9	18.0
30°-40°	3093.2	19.2
40°-50°	2821.9	17.5
50°-60°	2210.8	13.7
60°-70°	1440.9	8.9
70°-80°	638.4	4.0
80°-90°	137.1	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°	5759.8	35.8
0°-40°	8853.0	55.0
0°-60°	13885.7	86.2
0°-90°	16102.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	16102.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	8202	8202	8202	8202	8202	
5°	8060	8050	8050	8041	8041	765
15°	7538	7538	7462	7387	7358	2119
25°	6533	6495	6391	6164	5993	2999
35°	5301	5263	5007	4627	4514	3314
45°	4068	3982	3641	3338	3205	3133
55°	2826	2740	2484	2190	2077	2534
65°	1678	1584	1432	1460	1214	1654
75°	673	626	588	560	616	722
85°	95	104	114	123	133	132
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	8202.1	8202.1	8202.1	8202.1	8202.1
2.5°	8145.3	8145.3	8145.3	8135.8	8135.8
5°	8059.9	8050.4	8050.4	8040.9	8040.9
7.5°	7993.5	7984.1	7974.6	7965.1	7946.1
10°	7898.7	7898.7	7889.2	7841.8	7832.3
12.5°	7747.0	7737.5	7699.6	7633.2	7614.2
15°	7538.4	7538.4	7462.5	7386.7	7358.2
17.5°	7310.8	7301.3	7206.5	7130.6	7092.7
20°	7064.3	7045.3	6950.5	6827.2	6760.8
22.5°	6789.3	6789.3	6675.5	6514.3	6447.9
25°	6533.3	6495.3	6391.0	6163.5	5992.8
27.5°	6239.3	6182.4	6068.6	5746.2	5547.1
30°	5916.9	5888.5	5727.3	5310.1	5158.3
32.5°	5613.5	5566.1	5395.4	4959.2	4835.9
35°	5300.6	5262.6	5006.6	4627.3	4513.5
37.5°	4987.7	4940.3	4617.9	4314.4	4172.2
40°	4674.7	4617.9	4267.0	3992.0	3840.3
42.5°	4380.8	4304.9	3963.6	3669.6	3498.9
45°	4067.9	3982.5	3641.2	3337.8	3205.0
47.5°	3755.0	3679.1	3366.2	3053.3	2901.6
50°	3423.1	3356.7	3072.2	2759.3	2598.1
52.5°	3148.1	3043.8	2768.8	2455.9	2323.2
55°	2825.7	2740.4	2484.3	2190.4	2076.6
57.5°	2531.8	2446.4	2209.4	1934.4	1839.6
60°	2256.8	2133.5	1934.4	1697.3	1621.5
62.5°	1953.3	1858.5	1687.8	1488.7	1583.5
65°	1678.4	1583.5	1431.8	1460.3	1213.7
67.5°	1374.9	1327.5	1194.8	1062.0	1024.1
70°	1118.9	1062.0	1014.6	872.4	834.4
72.5°	891.3	834.4	768.1	692.2	663.8
75°	673.2	625.8	587.9	559.5	616.3
77.5°	464.6	445.7	417.2	388.8	379.3
80°	303.4	293.9	284.5	275.0	265.5
82.5°	180.2	180.2	180.2	180.2	180.2
85°	94.8	104.3	113.8	123.3	132.8
87.5°	56.9	56.9	66.4	75.9	85.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)