

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: P563661

Luminaire Tested: FSR-24-4-LD4-4HI-35-UNV-81-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563661  
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-LD4-4HI-35-UNV-81-96-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

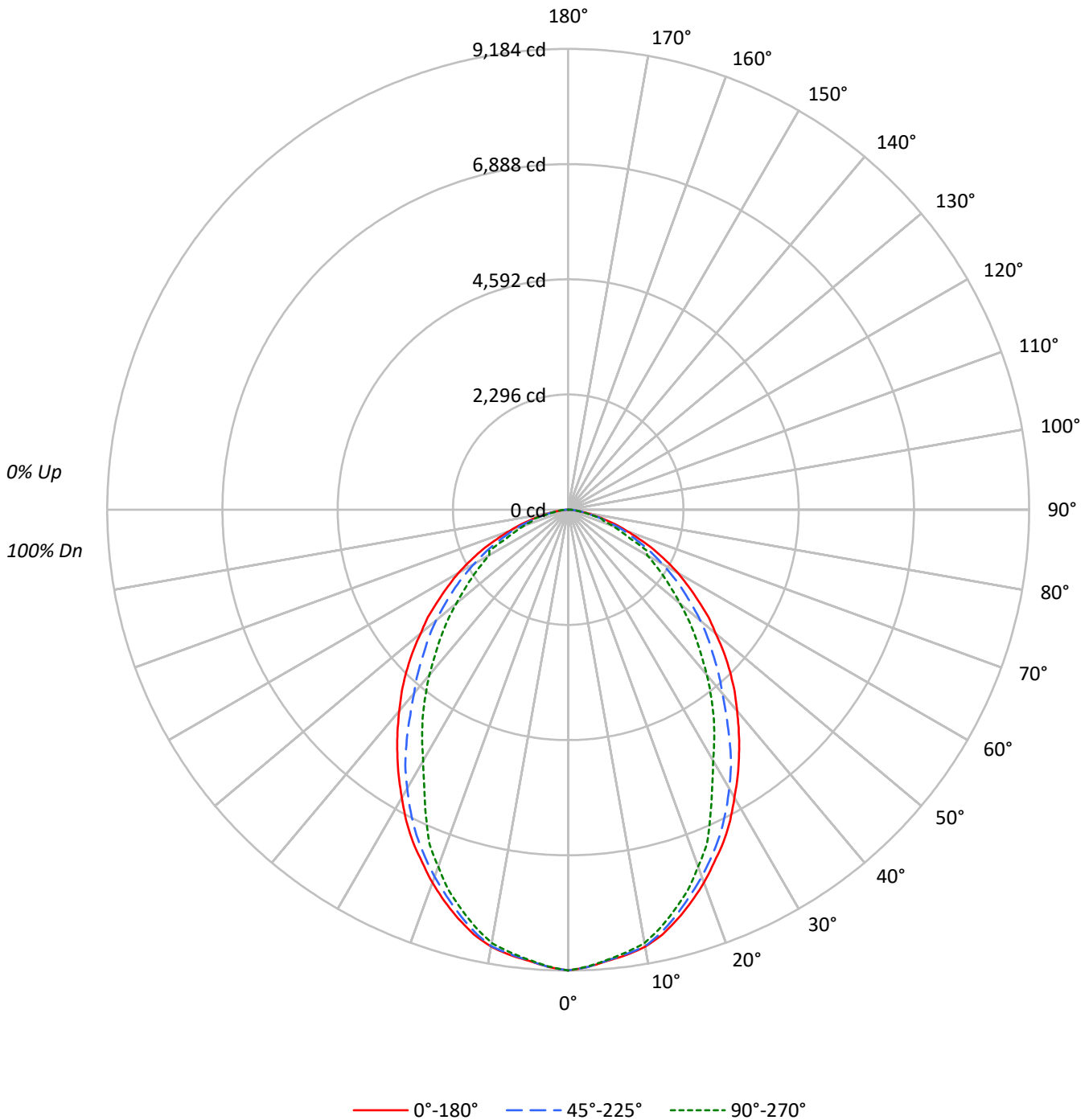
Lumens per Lamp: N/A  
Luminaire Lumens: 18029.0 lumens  
Efficiency: N/A  
Efficacy: 104.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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				
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77					75				
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67					65				
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58					56				
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52					50				
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46					44				
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42					40				
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38					36				
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34					33				
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32					30				

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

	0°	45°	90°
0°	12357	12357	12357
5°	12189	12174	12160
10°	12083	12069	11982
15°	11757	11639	11476
20°	11325	11143	10839
25°	10860	10624	9962
30°	10293	9963	8973
35°	9748	9208	8301
40°	9193	8392	7552
45°	8667	7758	6828
50°	8023	7200	6089
55°	7422	6525	5454
60°	6800	5828	4885
65°	5983	5104	4327
70°	4928	4469	3675
75°	3919	3422	3588
80°	2632	2468	2304
85°	1639	1967	2294

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8667 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	854.9	4.7
10°-20°	2346.1	13.0
20°-30°	3248.1	18.0
30°-40°	3463.4	19.2
40°-50°	3159.6	17.5
50°-60°	2475.3	13.7
60°-70°	1613.3	8.9
70°-80°	714.8	4.0
80°-90°	153.4	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°	6449.1	35.8
0°-40°	9912.5	55.0
0°-60°	15547.5	86.2
0°-90°	18029.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	18029.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9184	9184	9184	9184	9184	
5°	9024	9014	9014	9003	9003	857
15°	8440	8440	8356	8271	8239	2373
25°	7315	7273	7156	6901	6710	3358
35°	5935	5892	5606	5181	5054	3710
45°	4555	4459	4077	3737	3589	3508
55°	3164	3068	2782	2452	2325	2838
65°	1879	1773	1603	1635	1359	1852
75°	754	701	658	626	690	808
85°	106	117	127	138	149	147
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9183.7	9183.7	9183.7	9183.7	9183.7
2.5°	9120.0	9120.0	9120.0	9109.4	9109.4
5°	9024.5	9013.9	9013.9	9003.2	9003.2
7.5°	8950.2	8939.5	8928.9	8918.3	8897.1
10°	8844.0	8844.0	8833.4	8780.3	8769.7
12.5°	8674.1	8663.5	8621.0	8546.7	8525.5
15°	8440.5	8440.5	8355.6	8270.7	8238.8
17.5°	8185.7	8175.1	8068.9	7984.0	7941.5
20°	7909.7	7888.5	7782.3	7644.3	7569.9
22.5°	7601.8	7601.8	7474.4	7293.9	7219.6
25°	7315.1	7272.7	7155.9	6901.1	6710.0
27.5°	6986.0	6922.3	6794.9	6433.9	6211.0
30°	6625.0	6593.2	6412.7	5945.5	5775.7
32.5°	6285.3	6232.2	6041.1	5552.7	5414.7
35°	5934.9	5892.5	5605.8	5181.1	5053.7
37.5°	5584.6	5531.5	5170.5	4830.7	4671.5
40°	5234.2	5170.5	4777.7	4469.8	4299.9
42.5°	4905.1	4820.1	4437.9	4108.8	3917.7
45°	4554.7	4459.2	4076.9	3737.2	3588.6
47.5°	4204.3	4119.4	3769.0	3418.7	3248.8
50°	3832.7	3758.4	3439.9	3089.6	2909.1
52.5°	3524.9	3408.1	3100.2	2749.8	2601.2
55°	3163.9	3068.3	2781.7	2452.5	2325.1
57.5°	2834.7	2739.2	2473.8	2165.9	2059.7
60°	2526.9	2388.8	2165.9	1900.4	1815.5
62.5°	2187.1	2080.9	1889.8	1666.9	1773.0
65°	1879.2	1773.0	1603.2	1635.0	1359.0
67.5°	1539.5	1486.4	1337.7	1189.1	1146.6
70°	1252.8	1189.1	1136.0	976.8	934.3
72.5°	998.0	934.3	860.0	775.0	743.2
75°	753.8	700.7	658.3	626.4	690.1
77.5°	520.2	499.0	467.1	435.3	424.7
80°	339.7	329.1	318.5	307.9	297.3
82.5°	201.7	201.7	201.7	201.7	201.7
85°	106.2	116.8	127.4	138.0	148.6
87.5°	63.7	63.7	74.3	84.9	95.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)