

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: P563757

Luminaire Tested: FSR-24-4-LD4-4HI-40-UNV-93-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563757  
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-40-UNV-93-96-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

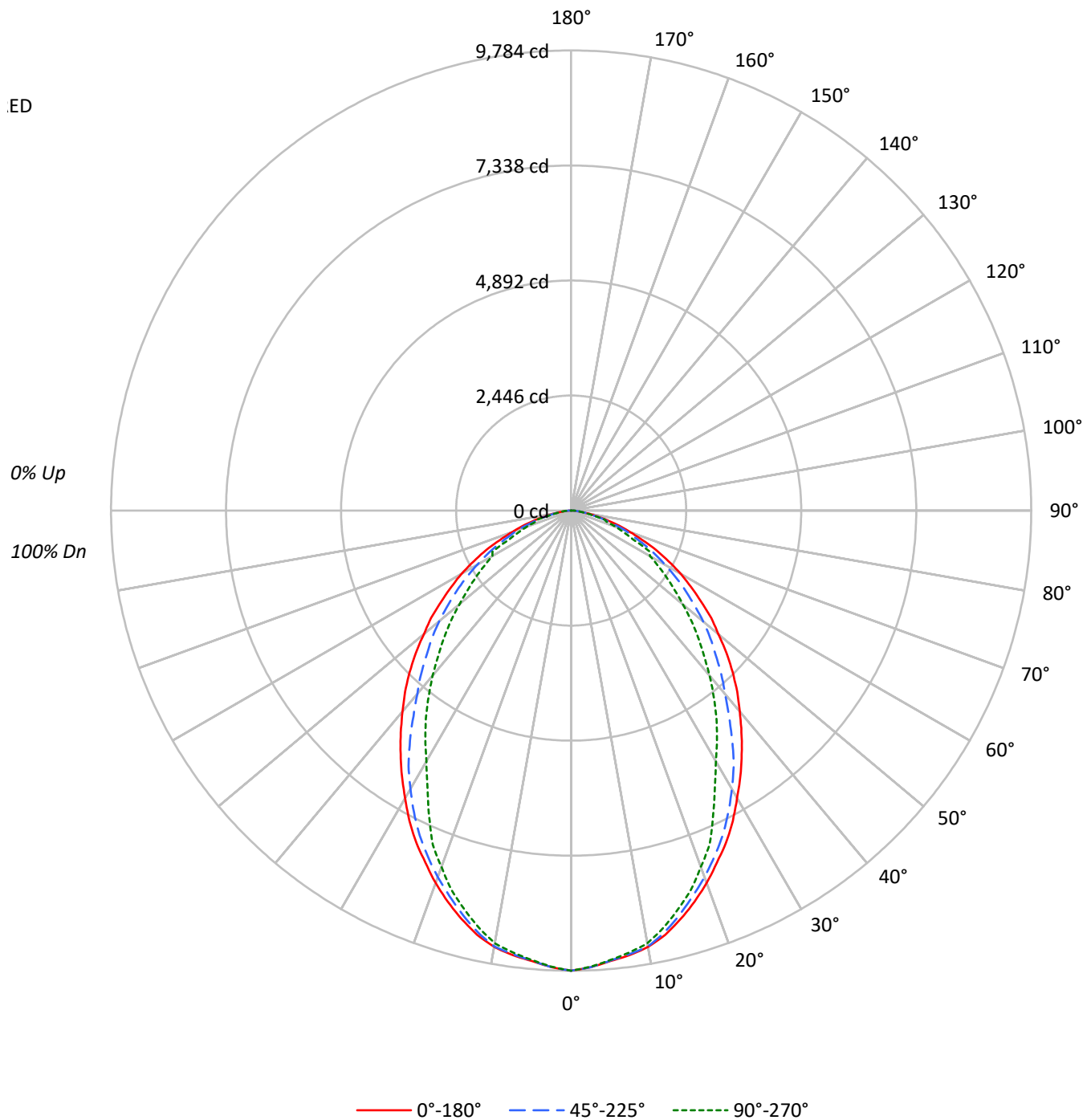
Lumens per Lamp: N/A  
Luminaire Lumens: 19207.0 lumens  
Efficiency: N/A  
Efficacy: 111.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 172.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																		
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	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°	13164	13164	13164
5°	12985	12970	12955
10°	12872	12857	12764
15°	12525	12400	12226
20°	12065	11871	11547
25°	11570	11318	10612
30°	10965	10614	9560
35°	10385	9809	8843
40°	9794	8940	8046
45°	9233	8264	7274
50°	8547	7671	6487
55°	7907	6952	5811
60°	7244	6209	5205
65°	6374	5437	4609
70°	5251	4761	3915
75°	4175	3646	3822
80°	2804	2629	2454
85°	1746	2095	2445

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9233 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	910.7	4.7
10°-20°	2499.4	13.0
20°-30°	3460.3	18.0
30°-40°	3689.7	19.2
40°-50°	3366.1	17.5
50°-60°	2637.1	13.7
60°-70°	1718.7	8.9
70°-80°	761.5	4.0
80°-90°	163.5	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°	6870.5	35.8
0°-40°	10560.2	55.0
0°-60°	16563.4	86.2
0°-90°	19207.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	19207.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	9784	9784	9784	9784	9784	
5°	9614	9603	9603	9592	9592	913
15°	8992	8992	8902	8811	8777	2528
25°	7793	7748	7623	7352	7148	3578
35°	6323	6278	5972	5520	5384	3953
45°	4852	4750	4343	3981	3823	3738
55°	3371	3269	2963	2613	2477	3023
65°	2002	1889	1708	1742	1448	1973
75°	803	746	701	667	735	861
85°	113	124	136	147	158	157
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9783.8	9783.8	9783.8	9783.8	9783.8
2.5°	9715.9	9715.9	9715.9	9704.6	9704.6
5°	9614.1	9602.8	9602.8	9591.5	9591.5
7.5°	9535.0	9523.6	9512.3	9501.0	9478.4
10°	9421.8	9421.8	9410.5	9354.0	9342.7
12.5°	9240.9	9229.6	9184.3	9105.1	9082.5
15°	8992.0	8992.0	8901.6	8811.1	8777.1
17.5°	8720.6	8709.3	8596.2	8505.7	8460.4
20°	8426.5	8403.9	8290.8	8143.7	8064.6
22.5°	8098.5	8098.5	7962.8	7770.5	7691.3
25°	7793.1	7747.9	7623.4	7352.0	7148.4
27.5°	7442.5	7374.6	7238.9	6854.3	6616.8
30°	7057.9	7024.0	6831.7	6334.0	6153.0
32.5°	6696.0	6639.4	6435.8	5915.5	5768.5
35°	6322.7	6277.5	5972.1	5519.6	5383.9
37.5°	5949.4	5892.9	5508.3	5146.4	4976.7
40°	5576.2	5508.3	5089.8	4761.8	4580.8
42.5°	5225.6	5135.1	4727.9	4377.3	4173.7
45°	4852.3	4750.5	4343.3	3981.4	3823.0
47.5°	4479.1	4388.6	4015.3	3642.1	3461.1
50°	4083.2	4004.0	3664.7	3291.4	3099.1
52.5°	3755.2	3630.7	3302.7	2929.5	2771.1
55°	3370.6	3268.8	2963.4	2612.8	2477.1
57.5°	3020.0	2918.2	2635.4	2307.4	2194.3
60°	2692.0	2544.9	2307.4	2024.6	1934.1
62.5°	2330.0	2216.9	2013.3	1775.8	1888.9
65°	2002.0	1888.9	1707.9	1741.9	1447.8
67.5°	1640.1	1583.5	1425.2	1266.8	1221.6
70°	1334.7	1266.8	1210.2	1040.6	995.3
72.5°	1063.2	995.3	916.2	825.7	791.8
75°	803.1	746.5	701.3	667.3	735.2
77.5°	554.2	531.6	497.7	463.7	452.4
80°	361.9	350.6	339.3	328.0	316.7
82.5°	214.9	214.9	214.9	214.9	214.9
85°	113.1	124.4	135.7	147.0	158.4
87.5°	67.9	67.9	79.2	90.5	101.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)