

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: P589887

Luminaire Tested: FSR-24-2-LD4-1HI-40-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589887  
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-LD4-1HI-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

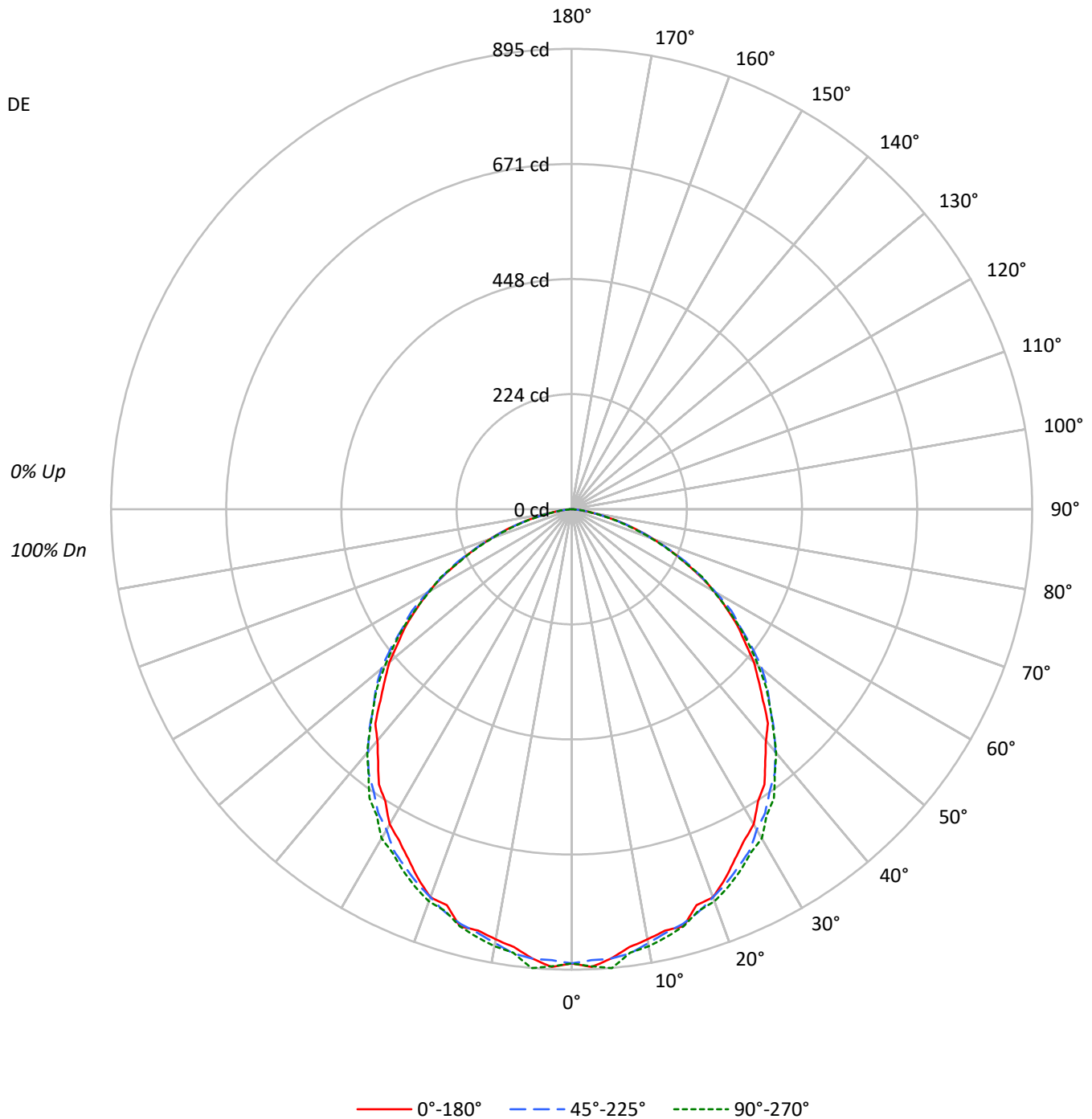
Lumens per Lamp: N/A  
Luminaire Lumens: 2225.0 lumens  
Efficiency: N/A  
Efficacy: 103.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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°	2376	2376	2376
5°	2368	2369	2419
10°	2320	2340	2357
15°	2338	2325	2338
20°	2299	2299	2323
25°	2228	2277	2302
30°	2197	2236	2295
35°	2145	2202	2251
40°	2062	2161	2171
45°	2000	2071	2074
50°	1934	2021	1983
55°	1843	1879	1865
60°	1723	1741	1709
65°	1536	1576	1526
70°	1319	1323	1286
75°	1044	1042	1001
80°	699	680	654
85°	380	377	352

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2124 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	83.0	3.7
10°-20°	235.4	10.6
20°-30°	352.6	15.8
30°-40°	417.9	18.8
40°-50°	418.7	18.8
50°-60°	355.4	16.0
60°-70°	239.6	10.8
70°-80°	105.3	4.7
80°-90°	17.1	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°	671.0	30.2
0°-40°	1088.9	48.9
0°-60°	1863.0	83.7
0°-90°	2225.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2225.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	883	883	883	883	883	
5°	877	874	877	874	895	83
15°	839	830	835	839	839	234
25°	750	754	767	777	775	347
35°	653	655	670	686	685	406
45°	526	535	544	558	545	406
55°	393	390	400	398	398	349
65°	241	238	248	238	240	240
75°	100	98	100	93	96	108
85°	12	12	12	12	11	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	882.8	882.8	882.8	882.8	882.8
2.5°	890.5	883.7	877.5	884.8	889.2
5°	876.6	874.5	876.9	874.3	895.4
7.5°	858.5	866.4	871.0	868.1	869.4
10°	849.0	846.2	856.4	863.4	862.4
12.5°	838.7	842.8	843.4	851.0	851.7
15°	839.3	829.6	834.7	839.1	839.4
17.5°	806.7	817.2	820.7	830.6	818.3
20°	802.7	795.1	802.7	812.8	811.2
22.5°	778.2	769.6	786.0	795.1	794.5
25°	750.4	754.5	766.8	776.8	775.2
27.5°	726.0	730.8	748.3	762.1	753.2
30°	707.2	704.8	719.6	731.9	738.7
32.5°	673.5	682.2	699.5	711.7	705.2
35°	653.1	655.1	670.2	685.7	685.3
37.5°	617.5	626.5	647.8	652.1	648.1
40°	587.0	596.0	615.3	620.0	618.0
42.5°	564.6	566.2	582.7	588.1	579.5
45°	525.5	535.3	544.2	558.2	545.0
47.5°	492.2	496.8	515.9	519.7	512.7
50°	462.0	463.6	482.8	478.2	473.6
52.5°	424.0	430.8	441.6	440.7	435.3
55°	392.8	390.2	400.4	397.7	397.6
57.5°	355.3	359.9	368.3	364.0	357.0
60°	320.2	320.3	323.4	318.5	317.6
62.5°	281.1	282.5	283.1	277.1	286.9
65°	241.3	238.1	247.5	238.0	239.6
67.5°	204.7	206.3	205.4	199.5	201.8
70°	167.6	169.6	168.1	161.4	163.5
72.5°	133.6	131.1	132.7	124.2	128.1
75°	100.4	98.4	100.2	93.1	96.3
77.5°	68.4	70.0	68.8	65.1	67.3
80°	45.1	43.9	43.9	41.7	42.2
82.5°	26.3	25.1	24.7	24.1	25.1
85°	12.3	12.0	12.2	11.9	11.4
87.5°	4.4	4.6	4.6	4.3	4.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)