

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: P589856

Luminaire Tested: FSR-24-2-LD4-1HI-35-UNV-81-87-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P589856  
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-35-UNV-81-87-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

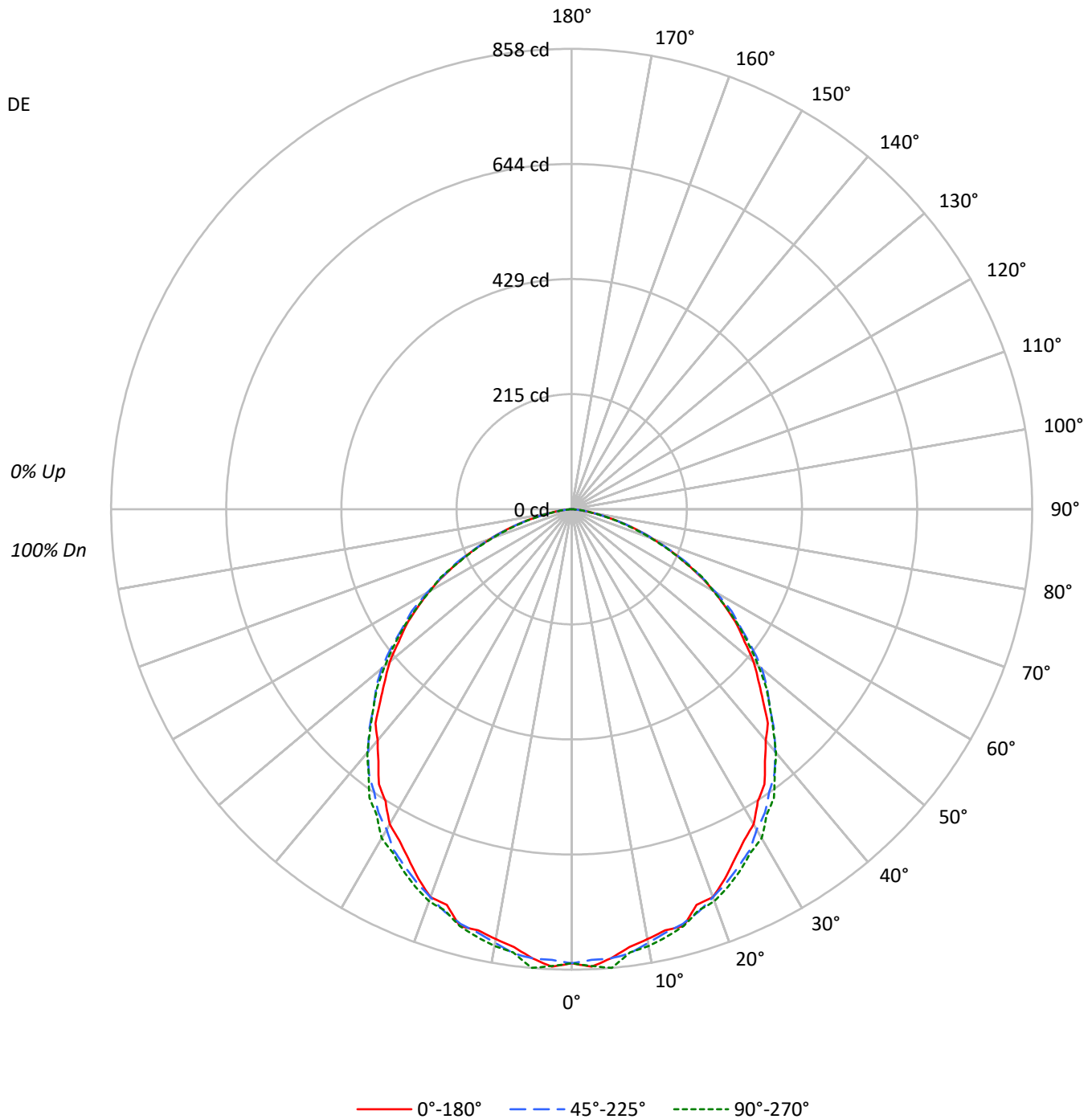
Lumens per Lamp: N/A  
Luminaire Lumens: 2132.0 lumens  
Efficiency: N/A  
Efficacy: 98.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 21.6  
Input Voltage (V):  
Input Current (Ain): NR  
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°	2276	2276	2276
5°	2269	2270	2317
10°	2223	2242	2258
15°	2240	2228	2241
20°	2202	2202	2226
25°	2135	2181	2205
30°	2105	2142	2200
35°	2056	2110	2157
40°	1976	2071	2080
45°	1916	1984	1987
50°	1853	1937	1900
55°	1766	1800	1787
60°	1651	1668	1638
65°	1472	1510	1462
70°	1264	1268	1232
75°	1000	998	960
80°	671	652	626
85°	364	361	337

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 2036 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	79.6	3.7
10°-20°	225.5	10.6
20°-30°	337.9	15.8
30°-40°	400.4	18.8
40°-50°	401.2	18.8
50°-60°	340.5	16.0
60°-70°	229.6	10.8
70°-80°	100.9	4.7
80°-90°	16.4	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°	643.0	30.2
0°-40°	1043.4	48.9
0°-60°	1785.1	83.7
0°-90°	2132.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2132.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	846	846	846	846	846	
5°	840	838	840	838	858	79
15°	804	795	800	804	804	224
25°	719	723	735	744	743	332
35°	626	628	642	657	657	389
45°	504	513	521	535	522	389
55°	376	374	384	381	381	335
65°	231	228	237	228	230	230
75°	96	94	96	89	92	103
85°	12	12	12	11	11	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	845.9	845.9	845.9	845.9	845.9
2.5°	853.2	846.8	840.8	847.8	852.0
5°	839.9	838.0	840.2	837.7	857.9
7.5°	822.7	830.2	834.6	831.8	833.0
10°	813.5	810.9	820.6	827.4	826.4
12.5°	803.7	807.6	808.1	815.5	816.1
15°	804.2	794.9	799.8	804.0	804.3
17.5°	773.0	783.0	786.4	795.9	784.1
20°	769.1	761.8	769.1	778.9	777.3
22.5°	745.7	737.5	753.2	761.8	761.3
25°	719.0	722.9	734.7	744.3	742.8
27.5°	695.6	700.2	717.0	730.3	721.7
30°	677.6	675.3	689.5	701.3	707.9
32.5°	645.4	653.7	670.3	682.0	675.8
35°	625.8	627.7	642.2	657.1	656.6
37.5°	591.7	600.3	620.7	624.9	621.0
40°	562.5	571.1	589.6	594.1	592.2
42.5°	541.0	542.5	558.3	563.5	555.3
45°	503.5	512.9	521.4	534.9	522.2
47.5°	471.6	476.0	494.3	497.9	491.3
50°	442.7	444.2	462.7	458.2	453.8
52.5°	406.3	412.7	423.1	422.3	417.1
55°	376.4	373.9	383.7	381.1	381.0
57.5°	340.4	344.8	352.9	348.7	342.1
60°	306.8	306.9	309.9	305.2	304.3
62.5°	269.3	270.7	271.3	265.5	274.9
65°	231.2	228.2	237.1	228.1	229.6
67.5°	196.2	197.7	196.8	191.1	193.3
70°	160.6	162.5	161.1	154.7	156.6
72.5°	128.0	125.6	127.1	119.1	122.8
75°	96.2	94.3	96.0	89.2	92.3
77.5°	65.5	67.1	66.0	62.4	64.4
80°	43.3	42.1	42.1	40.0	40.4
82.5°	25.2	24.0	23.7	23.0	24.0
85°	11.8	11.5	11.7	11.4	10.9
87.5°	4.3	4.4	4.4	4.2	3.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)