

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: P590047

Luminaire Tested: FSR-24-2-LD4-1STD-35-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590047  
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-LD4-1STD-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

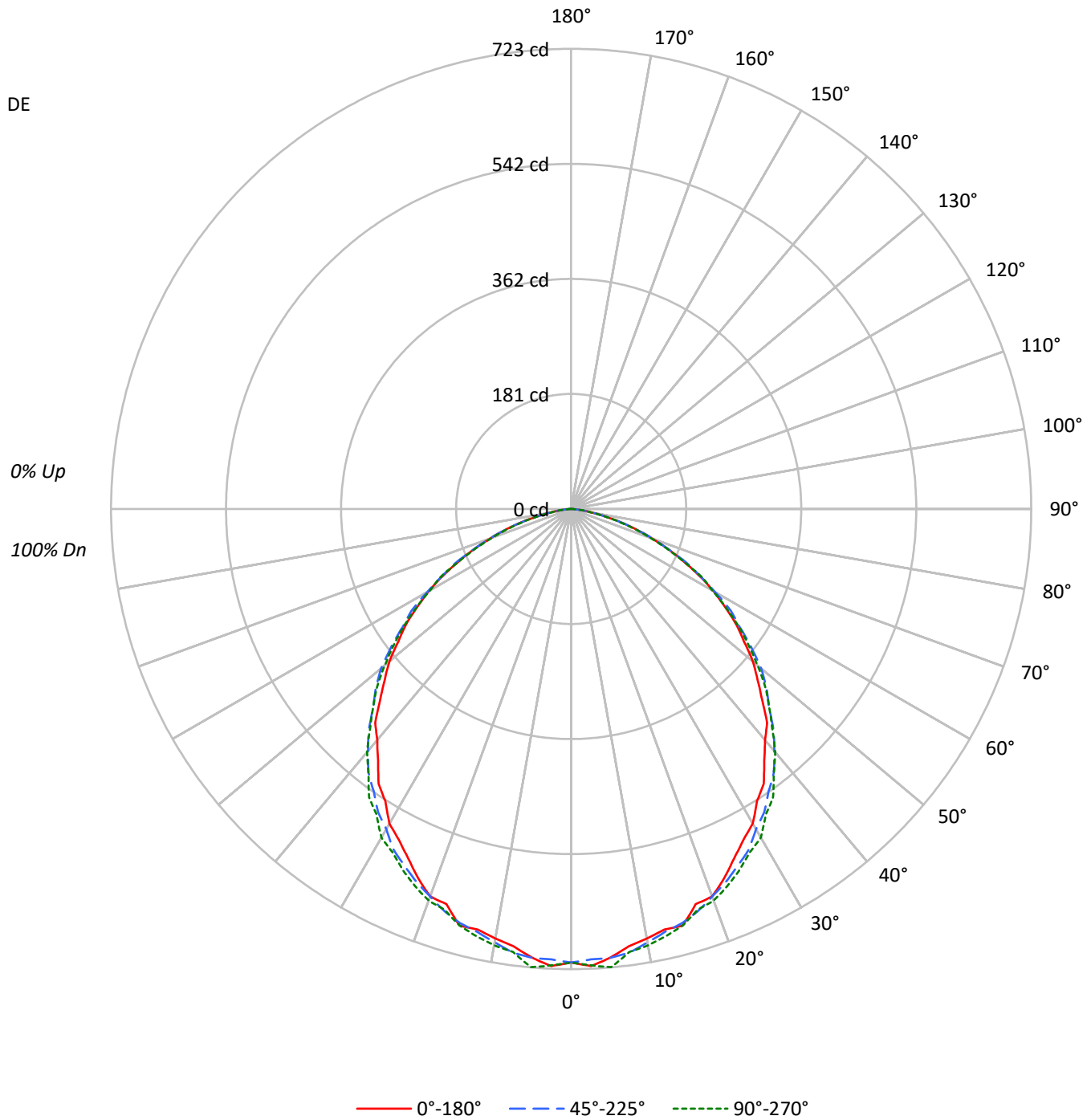
Lumens per Lamp: N/A  
Luminaire Lumens: 1796.0 lumens  
Efficiency: N/A  
Efficacy: 108.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 16.6  
Input Voltage (V):  
Input Current (Ain): NR  
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°	1918	1918	1918
5°	1911	1912	1952
10°	1873	1889	1902
15°	1887	1877	1888
20°	1855	1855	1875
25°	1798	1838	1858
30°	1774	1805	1853
35°	1732	1777	1817
40°	1664	1745	1753
45°	1614	1671	1674
50°	1561	1631	1600
55°	1488	1516	1506
60°	1391	1405	1379
65°	1240	1272	1231
70°	1065	1068	1038
75°	843	841	808
80°	564	549	527
85°	306	303	284

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 1715 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	67.0	3.7
10°-20°	190.0	10.6
20°-30°	284.6	15.8
30°-40°	337.3	18.8
40°-50°	338.0	18.8
50°-60°	286.9	16.0
60°-70°	193.4	10.8
70°-80°	85.0	4.7
80°-90°	13.8	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°	541.6	30.2
0°-40°	879.0	48.9
0°-60°	1503.8	83.7
0°-90°	1796.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1796.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	713	713	713	713	713	
5°	708	706	708	706	723	67
15°	678	670	674	677	678	189
25°	606	609	619	627	626	280
35°	527	529	541	554	553	327
45°	424	432	439	451	440	328
55°	317	315	323	321	321	282
65°	195	192	200	192	193	194
75°	81	79	81	75	78	87
85°	10	10	10	10	9	14
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	712.6	712.6	712.6	712.6	712.6
2.5°	718.8	713.3	708.3	714.2	717.8
5°	707.5	705.9	707.8	705.7	722.7
7.5°	693.0	699.4	703.0	700.7	701.8
10°	685.3	683.1	691.3	697.0	696.1
12.5°	677.0	680.3	680.8	686.9	687.5
15°	677.5	669.6	673.8	677.3	677.6
17.5°	651.1	659.6	662.5	670.5	660.5
20°	647.9	641.8	647.9	656.1	654.8
22.5°	628.1	621.2	634.5	641.8	641.3
25°	605.7	609.0	618.9	627.0	625.8
27.5°	586.0	589.9	604.0	615.2	608.0
30°	570.8	568.9	580.9	590.8	596.3
32.5°	543.7	550.7	564.7	574.5	569.3
35°	527.2	528.8	541.0	553.5	553.2
37.5°	498.4	505.7	522.9	526.4	523.2
40°	473.8	481.1	496.7	500.4	498.9
42.5°	455.7	457.0	470.3	474.7	467.8
45°	424.2	432.1	439.2	450.6	439.9
47.5°	397.3	401.0	416.4	419.5	413.9
50°	372.9	374.2	389.7	386.0	382.3
52.5°	342.3	347.7	356.4	355.7	351.4
55°	317.1	314.9	323.2	321.0	320.9
57.5°	286.8	290.5	297.3	293.8	288.2
60°	258.5	258.5	261.0	257.1	256.3
62.5°	226.9	228.0	228.5	223.7	231.6
65°	194.8	192.2	199.8	192.1	193.4
67.5°	165.2	166.5	165.8	161.0	162.9
70°	135.3	136.9	135.7	130.3	131.9
72.5°	107.8	105.8	107.1	100.3	103.4
75°	81.1	79.4	80.9	75.2	77.7
77.5°	55.2	56.5	55.6	52.5	54.3
80°	36.4	35.4	35.4	33.7	34.0
82.5°	21.3	20.2	20.0	19.4	20.2
85°	9.9	9.7	9.8	9.6	9.2
87.5°	3.6	3.7	3.7	3.5	3.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)