

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: P562501

Luminaire Tested: FSR-24-4-LD4-2HI-35-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562501  
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-LD4-2HI-35-UNV-81-86-EDD  
Description: 2X4 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: -

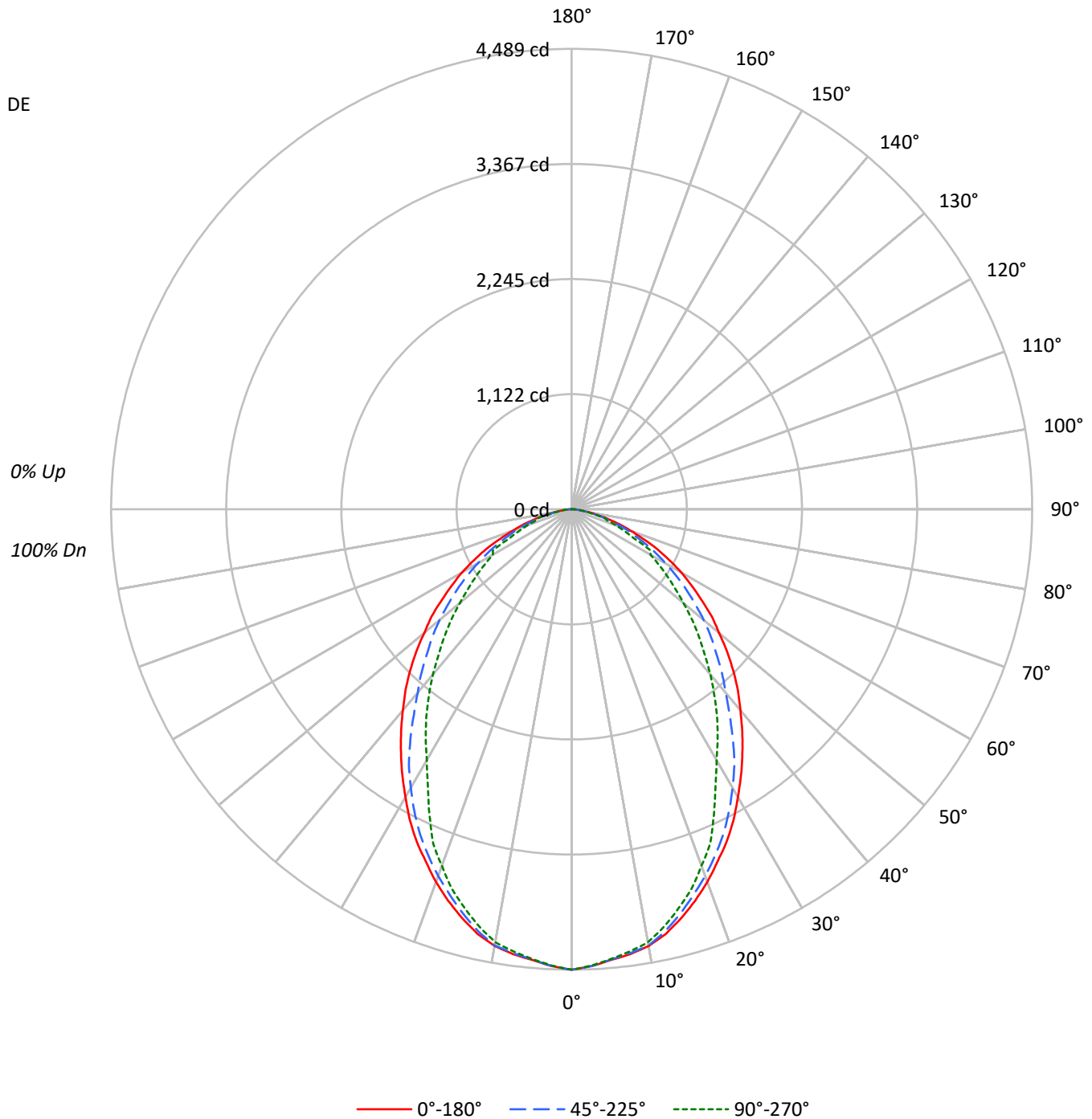
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8813.0 lumens  
Efficiency: N/A  
Efficacy: 102.0 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): 86.4  
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	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°	6040	6040	6040
5°	5958	5951	5944
10°	5906	5899	5857
15°	5747	5689	5610
20°	5536	5447	5298
25°	5309	5193	4869
30°	5031	4870	4386
35°	4765	4501	4058
40°	4494	4102	3692
45°	4236	3792	3338
50°	3922	3520	2977
55°	3628	3190	2666
60°	3324	2849	2388
65°	2925	2495	2115
70°	2409	2185	1797
75°	1916	1673	1753
80°	1287	1206	1126
85°	801	962	1122

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4236 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	417.9	4.7
10°-20°	1146.9	13.0
20°-30°	1587.7	18.0
30°-40°	1693.0	19.2
40°-50°	1544.5	17.5
50°-60°	1210.0	13.7
60°-70°	788.6	8.9
70°-80°	349.4	4.0
80°-90°	75.0	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°	3152.5	35.8
0°-40°	4845.5	55.0
0°-60°	7600.0	86.2
0°-90°	8813.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8813.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4489	4489	4489	4489	4489	
5°	4411	4406	4406	4401	4401	419
15°	4126	4126	4084	4043	4027	1160
25°	3576	3555	3498	3373	3280	1642
35°	2901	2880	2740	2533	2470	1814
45°	2226	2180	1993	1827	1754	1715
55°	1547	1500	1360	1199	1137	1387
65°	919	867	784	799	664	905
75°	368	342	322	306	337	395
85°	52	57	62	68	73	72
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4489.2	4489.2	4489.2	4489.2	4489.2
2.5°	4458.1	4458.1	4458.1	4452.9	4452.9
5°	4411.4	4406.2	4406.2	4401.0	4401.0
7.5°	4375.0	4369.9	4364.7	4359.5	4349.1
10°	4323.1	4323.1	4318.0	4292.0	4286.8
12.5°	4240.1	4234.9	4214.2	4177.8	4167.5
15°	4125.9	4125.9	4084.4	4042.9	4027.3
17.5°	4001.4	3996.2	3944.3	3902.8	3882.0
20°	3866.4	3856.1	3804.2	3736.7	3700.4
22.5°	3715.9	3715.9	3653.7	3565.4	3529.1
25°	3575.8	3555.1	3498.0	3373.4	3280.0
27.5°	3414.9	3383.8	3321.5	3145.1	3036.1
30°	3238.5	3222.9	3134.7	2906.3	2823.3
32.5°	3072.4	3046.4	2953.0	2714.3	2646.8
35°	2901.1	2880.4	2740.2	2532.6	2470.4
37.5°	2729.9	2703.9	2527.5	2361.4	2283.5
40°	2558.6	2527.5	2335.4	2184.9	2101.9
42.5°	2397.7	2356.2	2169.4	2008.5	1915.1
45°	2226.4	2179.7	1992.9	1826.8	1754.2
47.5°	2055.2	2013.7	1842.4	1671.1	1588.1
50°	1873.5	1837.2	1681.5	1510.2	1422.0
52.5°	1723.0	1665.9	1515.4	1344.2	1271.5
55°	1546.6	1499.9	1359.7	1198.9	1136.6
57.5°	1385.7	1339.0	1209.2	1058.7	1006.8
60°	1235.2	1167.7	1058.7	929.0	887.5
62.5°	1069.1	1017.2	923.8	814.8	866.7
65°	918.6	866.7	783.7	799.2	664.3
67.5°	752.5	726.6	653.9	581.3	560.5
70°	612.4	581.3	555.3	477.5	456.7
72.5°	487.8	456.7	420.4	378.9	363.3
75°	368.5	342.5	321.8	306.2	337.3
77.5°	254.3	243.9	228.4	212.8	207.6
80°	166.1	160.9	155.7	150.5	145.3
82.5°	98.6	98.6	98.6	98.6	98.6
85°	51.9	57.1	62.3	67.5	72.7
87.5°	31.1	31.1	36.3	41.5	46.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)