

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: P563848

Luminaire Tested: FSR-24-4-LD4-4LO-35-UNV-81-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563848  
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-LD4-4LO-35-UNV-81-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

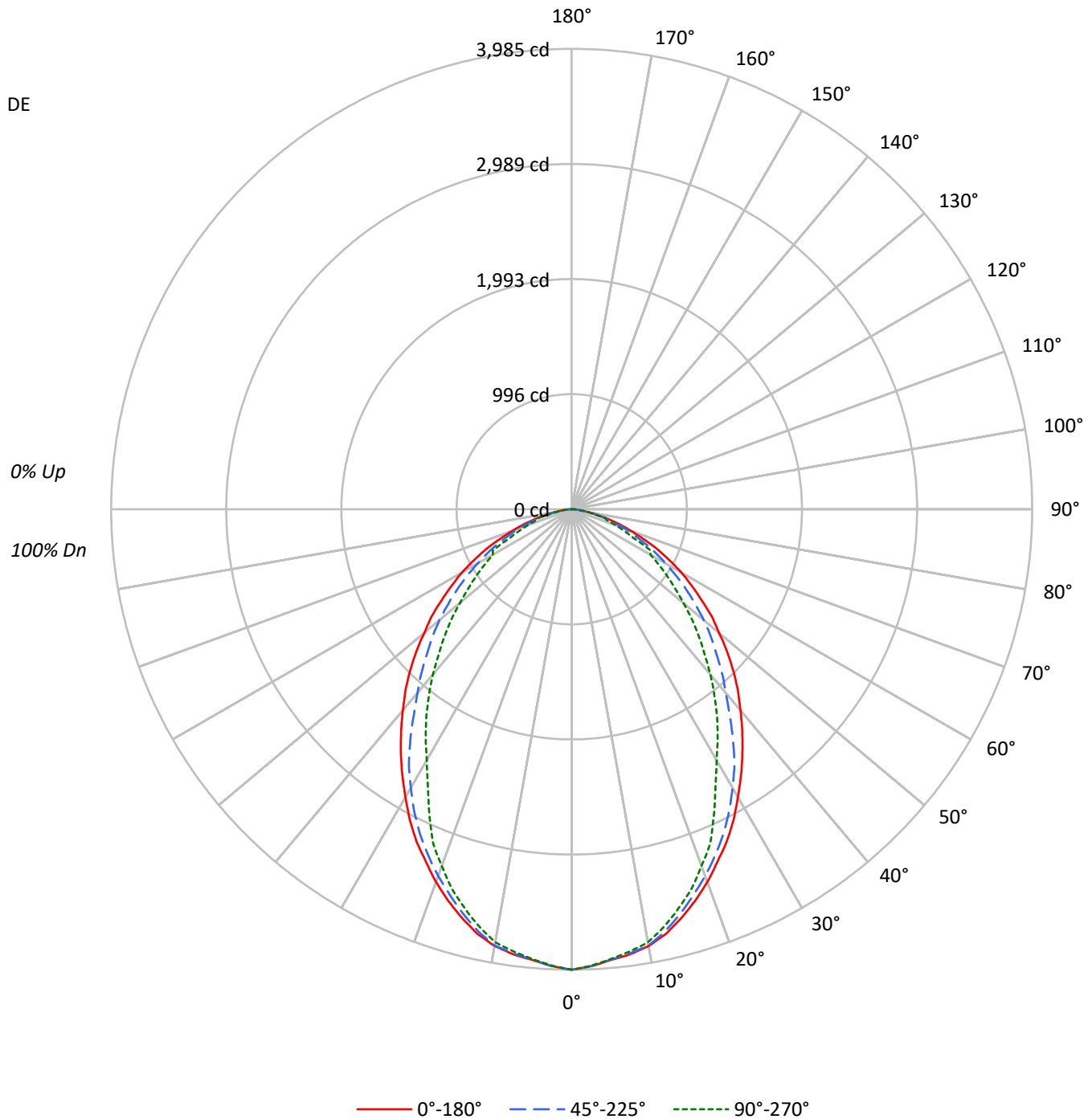
Lumens per Lamp: N/A  
Luminaire Lumens: 7824.0 lumens  
Efficiency: N/A  
Efficacy: 83.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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				
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77					75				
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67					65				
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58					56				
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52					50				
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46					44				
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42					40				
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38					36				
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34					33				
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32					30				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5362	5362	5362
5°	5289	5283	5277
10°	5244	5237	5200
15°	5102	5051	4980
20°	4915	4836	4704
25°	4713	4610	4323
30°	4467	4324	3894
35°	4231	3996	3602
40°	3990	3642	3277
45°	3761	3367	2963
50°	3482	3125	2642
55°	3221	2832	2367
60°	2951	2529	2120
65°	2596	2215	1878
70°	2139	1939	1595
75°	1700	1485	1557
80°	1142	1071	1000
85°	712	854	996

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3761 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	371.0	4.7
10°-20°	1018.2	13.0
20°-30°	1409.6	18.0
30°-40°	1503.0	19.2
40°-50°	1371.2	17.5
50°-60°	1074.2	13.7
60°-70°	700.1	8.9
70°-80°	310.2	4.0
80°-90°	66.6	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°	2798.7	35.8
0°-40°	4301.7	55.0
0°-60°	6747.1	86.2
0°-90°	7824.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7824.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3985	3985	3985	3985	3985	
5°	3916	3912	3912	3907	3907	372
15°	3663	3663	3626	3589	3575	1030
25°	3174	3156	3105	2995	2912	1457
35°	2576	2557	2433	2248	2193	1610
45°	1977	1935	1769	1622	1557	1523
55°	1373	1332	1207	1064	1009	1232
65°	816	769	696	710	590	804
75°	327	304	286	272	300	351
85°	46	51	55	60	64	64
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3985.4	3985.4	3985.4	3985.4	3985.4
2.5°	3957.8	3957.8	3957.8	3953.2	3953.2
5°	3916.3	3911.7	3911.7	3907.1	3907.1
7.5°	3884.1	3879.5	3874.9	3870.3	3861.0
10°	3838.0	3838.0	3833.4	3810.4	3805.8
12.5°	3764.3	3759.7	3741.2	3709.0	3699.8
15°	3662.9	3662.9	3626.1	3589.2	3575.4
17.5°	3552.3	3547.7	3501.7	3464.8	3446.4
20°	3432.5	3423.3	3377.3	3317.4	3285.1
22.5°	3298.9	3298.9	3243.6	3165.3	3133.1
25°	3174.5	3156.1	3105.4	2994.8	2911.9
27.5°	3031.7	3004.1	2948.8	2792.1	2695.4
30°	2875.0	2861.2	2782.9	2580.2	2506.5
32.5°	2727.6	2704.6	2621.6	2409.7	2349.8
35°	2575.6	2557.1	2432.7	2248.4	2193.1
37.5°	2423.5	2400.5	2243.8	2096.4	2027.3
40°	2271.5	2243.8	2073.4	1939.7	1866.0
42.5°	2128.6	2091.8	1925.9	1783.1	1700.1
45°	1976.6	1935.1	1769.3	1621.8	1557.3
47.5°	1824.5	1787.7	1635.6	1483.6	1409.9
50°	1663.3	1631.0	1492.8	1340.8	1262.4
52.5°	1529.7	1479.0	1345.4	1193.3	1128.8
55°	1373.0	1331.6	1207.2	1064.3	1009.0
57.5°	1230.2	1188.7	1073.5	939.9	893.8
60°	1096.6	1036.7	939.9	824.7	787.9
62.5°	949.1	903.1	820.1	723.4	769.4
65°	815.5	769.4	695.7	709.5	589.8
67.5°	668.1	645.0	580.5	516.0	497.6
70°	543.7	516.0	493.0	423.9	405.5
72.5°	433.1	405.5	373.2	336.3	322.5
75°	327.1	304.1	285.7	271.8	299.5
77.5°	225.8	216.5	202.7	188.9	184.3
80°	147.4	142.8	138.2	133.6	129.0
82.5°	87.5	87.5	87.5	87.5	87.5
85°	46.1	50.7	55.3	59.9	64.5
87.5°	27.6	27.6	32.3	36.9	41.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)