

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: P563442

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-80-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563442  
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-LD4-3STD-35-UNV-80-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRON  
SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

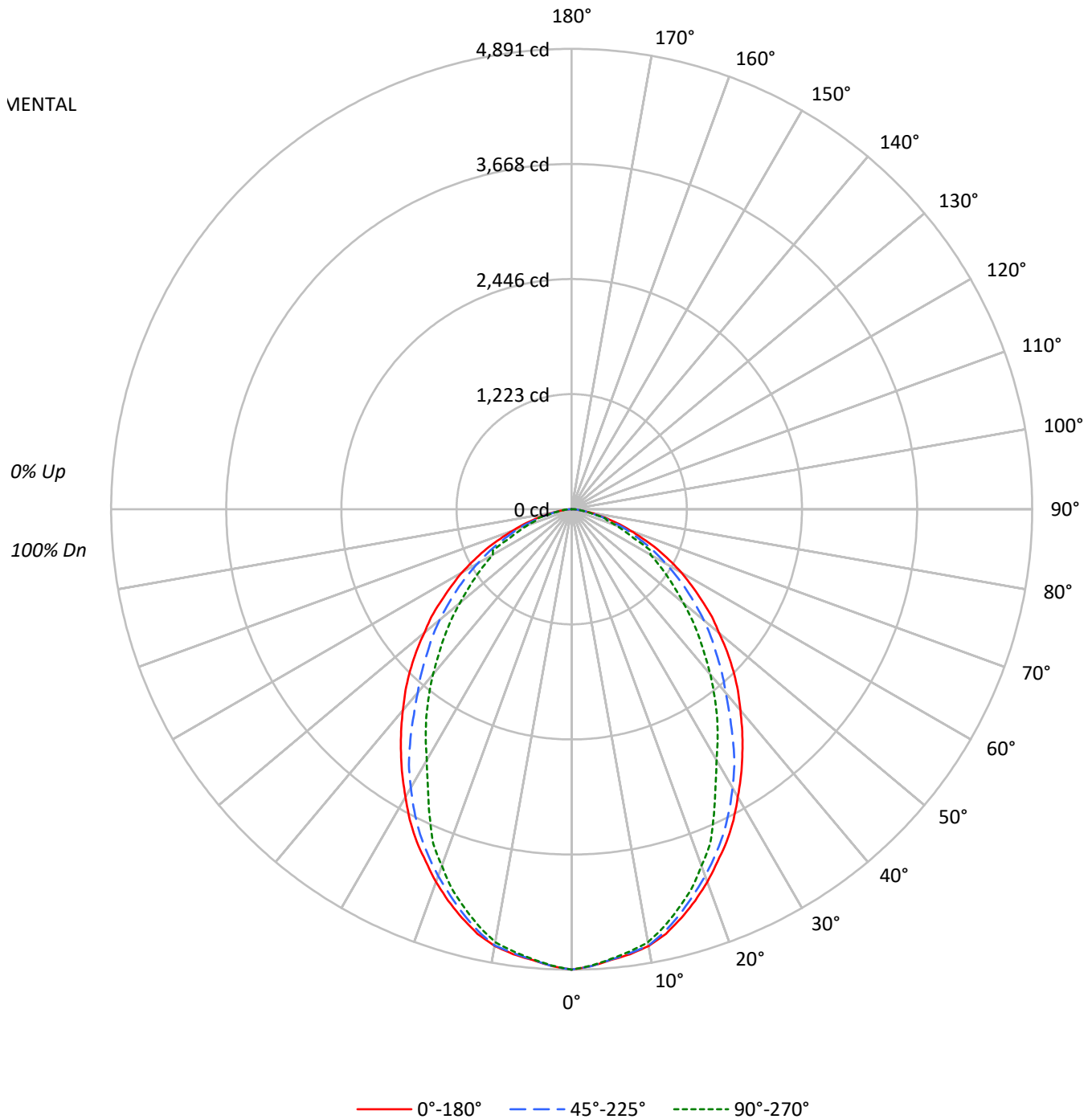
Lumens per Lamp: N/A  
Luminaire Lumens: 9602.0 lumens  
Efficiency: N/A  
Efficacy: 96.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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					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°	6581	6581	6581
5°	6492	6484	6476
10°	6435	6428	6381
15°	6262	6199	6112
20°	6032	5935	5773
25°	5784	5658	5305
30°	5482	5306	4779
35°	5192	4904	4421
40°	4896	4469	4022
45°	4616	4132	3637
50°	4273	3835	3243
55°	3953	3475	2905
60°	3622	3104	2602
65°	3186	2718	2304
70°	2625	2380	1958
75°	2087	1823	1910
80°	1402	1314	1227
85°	872	1048	1223

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4616 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	455.3	4.7
10°-20°	1249.5	13.0
20°-30°	1729.9	18.0
30°-40°	1844.6	19.2
40°-50°	1682.8	17.5
50°-60°	1318.3	13.7
60°-70°	859.2	8.9
70°-80°	380.7	4.0
80°-90°	81.7	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°	3434.7	35.8
0°-40°	5279.3	55.0
0°-60°	8280.4	86.2
0°-90°	9602.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9602.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4891	4891	4891	4891	4891	
5°	4806	4801	4801	4795	4795	456
15°	4495	4495	4450	4405	4388	1264
25°	3896	3873	3811	3675	3574	1789
35°	3161	3138	2986	2759	2692	1976
45°	2426	2375	2171	1990	1911	1869
55°	1685	1634	1482	1306	1238	1511
65°	1001	944	854	871	724	986
75°	402	373	351	334	368	430
85°	56	62	68	74	79	78
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4891.1	4891.1	4891.1	4891.1	4891.1
2.5°	4857.2	4857.2	4857.2	4851.5	4851.5
5°	4806.3	4800.7	4800.7	4795.0	4795.0
7.5°	4766.7	4761.1	4755.4	4749.8	4738.5
10°	4710.2	4710.2	4704.5	4676.3	4670.6
12.5°	4619.7	4614.1	4591.4	4551.9	4540.6
15°	4495.3	4495.3	4450.1	4404.8	4387.9
17.5°	4359.6	4354.0	4297.4	4252.2	4229.6
20°	4212.6	4201.3	4144.7	4071.2	4031.6
22.5°	4048.6	4048.6	3980.8	3884.6	3845.1
25°	3895.9	3873.3	3811.1	3675.4	3573.6
27.5°	3720.7	3686.7	3618.9	3426.6	3307.9
30°	3528.4	3511.4	3415.3	3166.5	3076.0
32.5°	3347.5	3319.2	3217.4	2957.3	2883.8
35°	3160.9	3138.2	2985.6	2759.4	2691.5
37.5°	2974.3	2946.0	2753.7	2572.8	2488.0
40°	2787.7	2753.7	2544.5	2380.5	2290.1
42.5°	2612.4	2567.1	2363.6	2188.3	2086.5
45°	2425.8	2374.9	2171.3	1990.4	1911.2
47.5°	2239.2	2193.9	2007.3	1820.7	1730.3
50°	2041.3	2001.7	1832.1	1645.5	1549.3
52.5°	1877.3	1815.1	1651.1	1464.5	1385.3
55°	1685.0	1634.1	1481.5	1306.2	1238.3
57.5°	1509.7	1458.9	1317.5	1153.5	1097.0
60°	1345.8	1272.3	1153.5	1012.2	966.9
62.5°	1164.8	1108.3	1006.5	887.8	944.3
65°	1000.8	944.3	853.8	870.8	723.8
67.5°	819.9	791.6	712.5	633.3	610.7
70°	667.2	633.3	605.0	520.2	497.6
72.5°	531.5	497.6	458.0	412.8	395.8
75°	401.5	373.2	350.6	333.6	367.5
77.5°	277.1	265.8	248.8	231.8	226.2
80°	180.9	175.3	169.6	164.0	158.3
82.5°	107.4	107.4	107.4	107.4	107.4
85°	56.5	62.2	67.9	73.5	79.2
87.5°	33.9	33.9	39.6	45.2	50.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)