

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: P563117

Luminaire Tested: FSR-24-4-LD4-3HI-35-UNV-93-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563117  
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-LD4-3HI-35-UNV-93-96-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

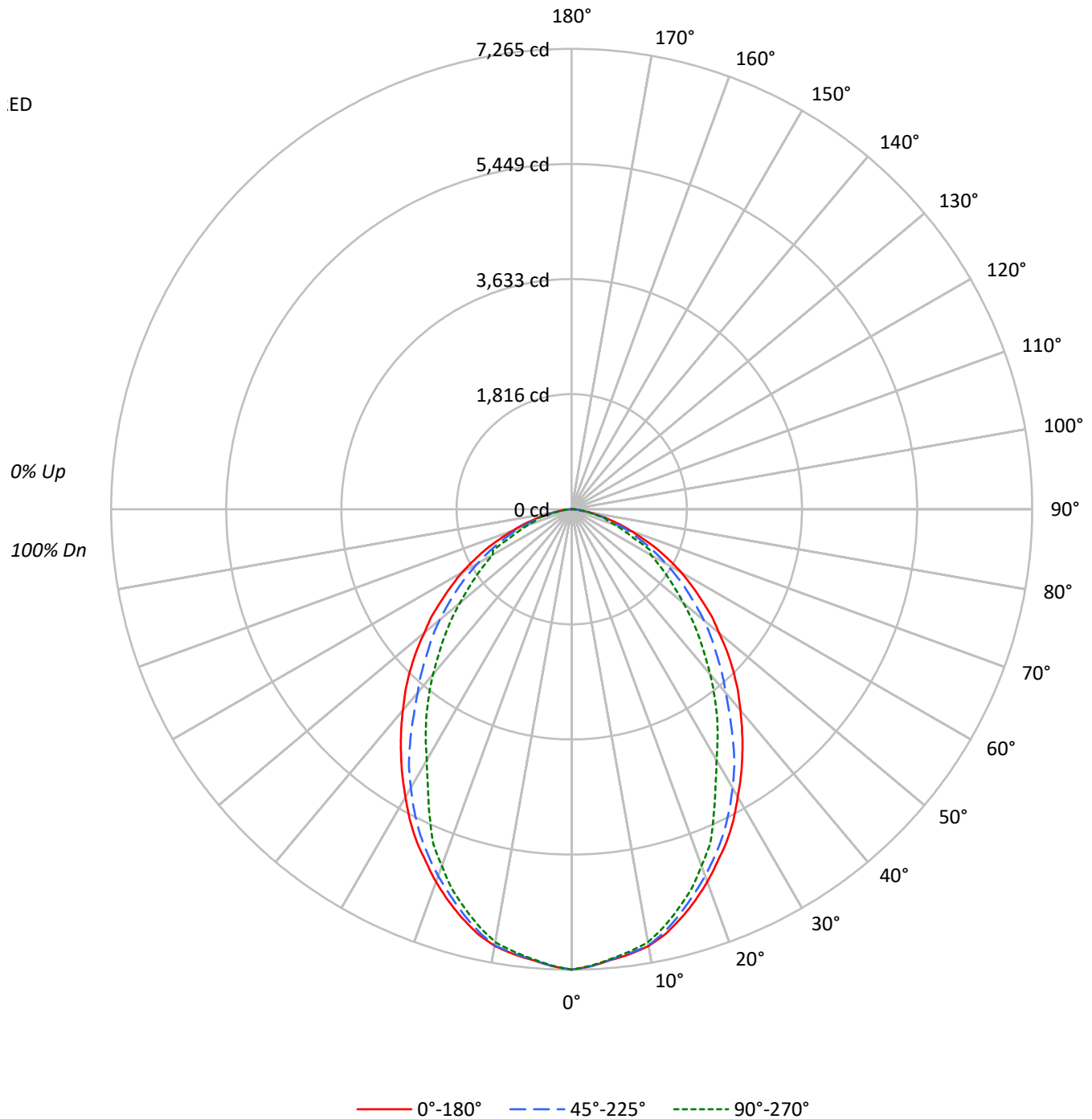
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 14262.0 lumens  
Efficiency: N/A  
Efficacy: 110.0 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): 129.6  
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



TEST NUMBER: P563117  
CATALOG NUMBER: FSR-24-4-LD4-3HI-35-UNV-93-96-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P563117

CATALOG NUMBER: FSR-24-4-LD4-3HI-35-UNV-93-96-EDD

**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°	9775	9775	9775
5°	9642	9631	9619
10°	9558	9547	9478
15°	9301	9207	9078
20°	8959	8815	8574
25°	8591	8404	7880
30°	8142	7881	7098
35°	7712	7284	6567
40°	7273	6638	5974
45°	6856	6137	5402
50°	6346	5696	4817
55°	5871	5162	4315
60°	5379	4610	3865
65°	4733	4038	3422
70°	3899	3535	2908
75°	3100	2707	2838
80°	2083	1953	1822
85°	1297	1556	1815

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6856 cd/sqm



TEST NUMBER: P563117

CATALOG NUMBER: FSR-24-4-LD4-3HI-35-UNV-93-96-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	676.3	4.7
10°-20°	1855.9	13.0
20°-30°	2569.4	18.0
30°-40°	2739.8	19.2
40°-50°	2499.5	17.5
50°-60°	1958.1	13.7
60°-70°	1276.2	8.9
70°-80°	565.4	4.0
80°-90°	121.4	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°	5101.6	35.8
0°-40°	7841.4	55.0
0°-60°	12299.0	86.2
0°-90°	14262.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14262.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7265	7265	7265	7265	7265	
5°	7139	7130	7130	7122	7122	678
15°	6677	6677	6610	6543	6517	1877
25°	5787	5753	5661	5459	5308	2657
35°	4695	4661	4434	4099	3998	2935
45°	3603	3528	3225	2956	2839	2775
55°	2503	2427	2200	1940	1839	2245
65°	1487	1403	1268	1293	1075	1465
75°	596	554	521	496	546	639
85°	84	92	101	109	118	117
90°	0	0	0	0	0	



TEST NUMBER: P563117

CATALOG NUMBER: FSR-24-4-LD4-3HI-35-UNV-93-96-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7264.9	7264.9	7264.9	7264.9	7264.9
2.5°	7214.5	7214.5	7214.5	7206.1	7206.1
5°	7138.9	7130.5	7130.5	7122.1	7122.1
7.5°	7080.1	7071.7	7063.3	7054.9	7038.1
10°	6996.1	6996.1	6987.7	6945.7	6937.3
12.5°	6861.7	6853.3	6819.7	6761.0	6744.2
15°	6677.0	6677.0	6609.8	6542.6	6517.4
17.5°	6475.4	6467.0	6383.0	6315.8	6282.2
20°	6257.0	6240.2	6156.2	6047.1	5988.3
22.5°	6013.5	6013.5	5912.7	5769.9	5711.1
25°	5786.7	5753.1	5660.7	5459.2	5308.0
27.5°	5526.3	5475.9	5375.2	5089.6	4913.2
30°	5240.8	5215.6	5072.8	4703.3	4568.9
32.5°	4972.0	4930.0	4778.9	4392.5	4283.3
35°	4694.9	4661.3	4434.5	4098.6	3997.8
37.5°	4417.7	4375.7	4090.2	3821.4	3695.4
40°	4140.6	4090.2	3779.4	3535.9	3401.5
42.5°	3880.2	3813.0	3510.7	3250.3	3099.1
45°	3603.0	3527.5	3225.1	2956.3	2838.8
47.5°	3325.9	3258.7	2981.5	2704.4	2570.0
50°	3031.9	2973.1	2721.2	2444.0	2301.2
52.5°	2788.4	2696.0	2452.4	2175.3	2057.7
55°	2502.8	2427.2	2200.5	1940.1	1839.3
57.5°	2242.5	2166.9	1956.9	1713.3	1629.3
60°	1998.9	1889.7	1713.3	1503.4	1436.2
62.5°	1730.1	1646.1	1495.0	1318.6	1402.6
65°	1486.6	1402.6	1268.2	1293.4	1075.0
67.5°	1217.8	1175.8	1058.2	940.7	907.1
70°	991.0	940.7	898.7	772.7	739.1
72.5°	789.5	739.1	680.3	613.1	587.9
75°	596.3	554.3	520.7	495.5	545.9
77.5°	411.5	394.7	369.5	344.3	335.9
80°	268.8	260.4	252.0	243.6	235.2
82.5°	159.6	159.6	159.6	159.6	159.6
85°	84.0	92.4	100.8	109.2	117.6
87.5°	50.4	50.4	58.8	67.2	75.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)