

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: P563114

Luminaire Tested: FSR-24-4-LD4-3HI-35-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563114  
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-93-94-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

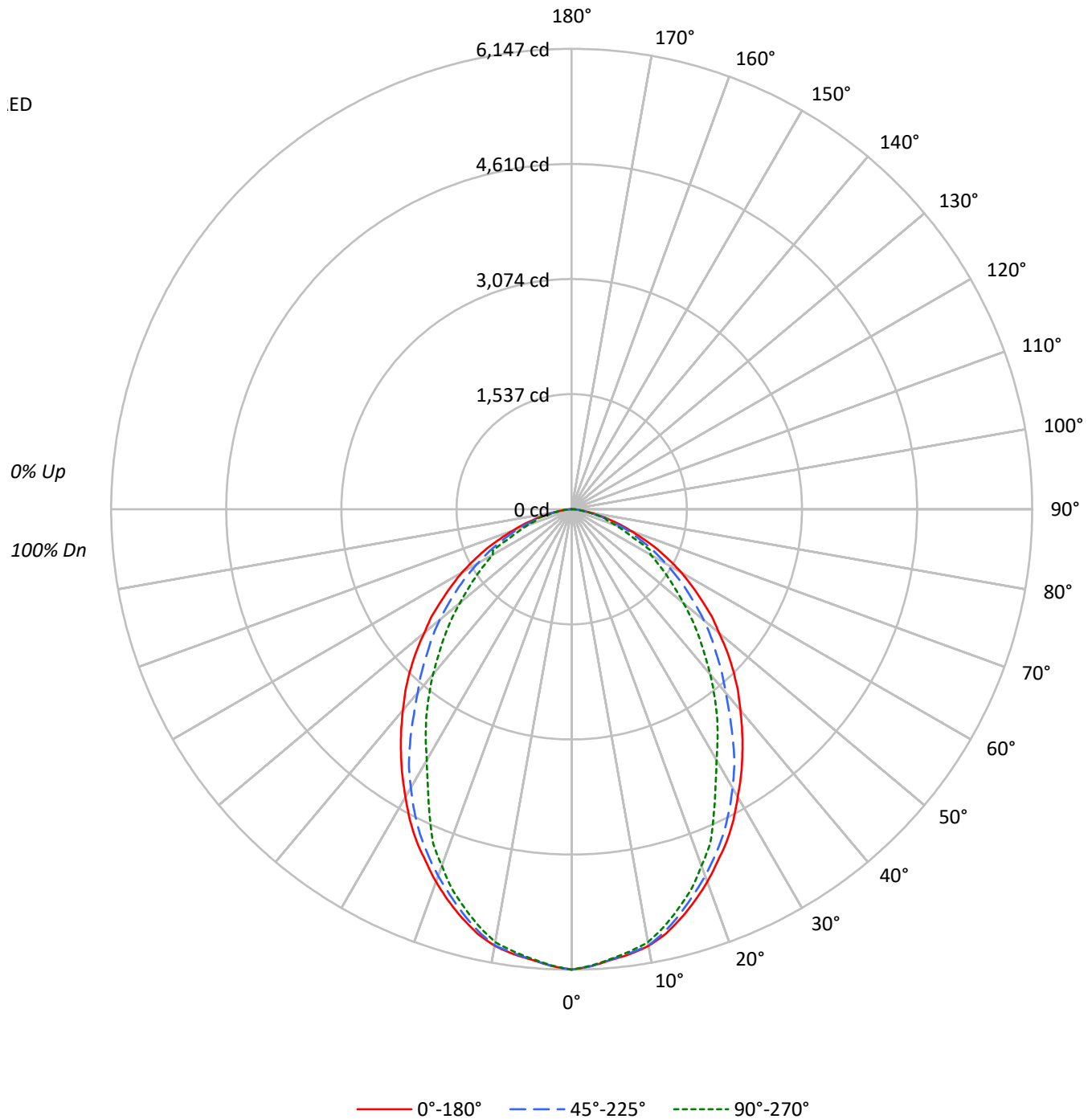
Lumens per Lamp: N/A  
Luminaire Lumens: 12067.0 lumens  
Efficiency: N/A  
Efficacy: 93.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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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°	8270	8270	8270
5°	8158	8148	8139
10°	8087	8078	8019
15°	7869	7790	7681
20°	7580	7458	7255
25°	7269	7110	6667
30°	6889	6668	6006
35°	6525	6163	5556
40°	6153	5616	5055
45°	5801	5192	4570
50°	5370	4819	4076
55°	4967	4367	3651
60°	4551	3901	3270
65°	4004	3416	2896
70°	3299	2991	2460
75°	2623	2290	2401
80°	1762	1652	1542
85°	1098	1317	1536

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5801 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	572.2	4.7
10°-20°	1570.3	13.0
20°-30°	2174.0	18.0
30°-40°	2318.1	19.2
40°-50°	2114.8	17.5
50°-60°	1656.8	13.7
60°-70°	1079.8	8.9
70°-80°	478.4	4.0
80°-90°	102.7	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°	4316.5	35.8
0°-40°	6634.6	55.0
0°-60°	10406.1	86.2
0°-90°	12067.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12067.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6147	6147	6147	6147	6147	
5°	6040	6033	6033	6026	6026	573
15°	5649	5649	5592	5536	5514	1588
25°	4896	4868	4790	4619	4491	2248
35°	3972	3944	3752	3468	3382	2483
45°	3048	2985	2729	2501	2402	2348
55°	2118	2054	1862	1642	1556	1899
65°	1258	1187	1073	1094	910	1240
75°	504	469	441	419	462	541
85°	71	78	85	92	100	99
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6146.8	6146.8	6146.8	6146.8	6146.8
2.5°	6104.1	6104.1	6104.1	6097.0	6097.0
5°	6040.2	6033.1	6033.1	6026.0	6026.0
7.5°	5990.4	5983.3	5976.2	5969.1	5954.9
10°	5919.4	5919.4	5912.3	5876.7	5869.6
12.5°	5805.7	5798.6	5770.1	5720.4	5706.2
15°	5649.3	5649.3	5592.5	5535.6	5514.3
17.5°	5478.8	5471.7	5400.6	5343.8	5315.4
20°	5294.0	5279.8	5208.8	5116.4	5066.6
22.5°	5088.0	5088.0	5002.7	4881.9	4832.1
25°	4896.1	4867.7	4789.5	4619.0	4491.0
27.5°	4675.8	4633.2	4547.9	4306.3	4157.1
30°	4434.2	4412.9	4292.1	3979.4	3865.7
32.5°	4206.8	4171.3	4043.4	3716.5	3624.1
35°	3972.3	3943.9	3752.0	3467.8	3382.5
37.5°	3737.8	3702.3	3460.7	3233.3	3126.7
40°	3503.3	3460.7	3197.7	2991.7	2878.0
42.5°	3283.0	3226.2	2970.3	2750.1	2622.1
45°	3048.5	2984.6	2728.7	2501.3	2401.9
47.5°	2814.0	2757.2	2522.7	2288.2	2174.5
50°	2565.3	2515.6	2302.4	2067.9	1947.1
52.5°	2359.2	2281.1	2075.0	1840.5	1741.0
55°	2117.6	2053.7	1861.8	1641.5	1556.2
57.5°	1897.3	1833.4	1655.7	1449.6	1378.6
60°	1691.2	1598.9	1449.6	1272.0	1215.1
62.5°	1463.9	1392.8	1264.9	1115.7	1186.7
65°	1257.8	1186.7	1073.0	1094.3	909.6
67.5°	1030.4	994.9	895.4	795.9	767.5
70°	838.5	795.9	760.4	653.8	625.3
72.5°	668.0	625.3	575.6	518.7	497.4
75°	504.5	469.0	440.6	419.3	461.9
77.5°	348.2	334.0	312.7	291.3	284.2
80°	227.4	220.3	213.2	206.1	199.0
82.5°	135.0	135.0	135.0	135.0	135.0
85°	71.1	78.2	85.3	92.4	99.5
87.5°	42.6	42.6	49.7	56.8	64.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)