

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: P562162

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-80-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562162  
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-LD4-1LO-40-UNV-80-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .187 CLEAR PC ENVIRONM  
SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2424.0 lumens  
Efficiency: N/A  
Efficacy: 103.6 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): 23.4  
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	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°	1661	1661	1661
5°	1639	1637	1635
10°	1625	1623	1611
15°	1581	1565	1543
20°	1523	1498	1457
25°	1460	1428	1339
30°	1384	1340	1206
35°	1311	1238	1116
40°	1236	1128	1015
45°	1165	1043	918
50°	1079	968	819
55°	998	877	733
60°	914	784	657
65°	805	686	582
70°	662	601	494
75°	527	460	482
80°	354	332	310
85°	221	264	309

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1165 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	114.9	4.7
10°-20°	315.4	13.0
20°-30°	436.7	18.0
30°-40°	465.7	19.2
40°-50°	424.8	17.5
50°-60°	332.8	13.7
60°-70°	216.9	8.9
70°-80°	96.1	4.0
80°-90°	20.6	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°	867.1	35.8
0°-40°	1332.7	55.0
0°-60°	2090.4	86.2
0°-90°	2424.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2424.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1235	1235	1235	1235	1235	
5°	1213	1212	1212	1210	1210	115
15°	1135	1135	1123	1112	1108	319
25°	984	978	962	928	902	452
35°	798	792	754	697	680	499
45°	612	600	548	502	482	472
55°	425	412	374	330	313	382
65°	253	238	216	220	183	249
75°	101	94	88	84	93	109
85°	14	16	17	19	20	20
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1234.8	1234.8	1234.8	1234.8	1234.8
2.5°	1226.2	1226.2	1226.2	1224.8	1224.8
5°	1213.3	1211.9	1211.9	1210.5	1210.5
7.5°	1203.3	1201.9	1200.5	1199.1	1196.2
10°	1189.1	1189.1	1187.6	1180.5	1179.1
12.5°	1166.2	1164.8	1159.1	1149.1	1146.3
15°	1134.8	1134.8	1123.4	1112.0	1107.7
17.5°	1100.6	1099.1	1084.9	1073.5	1067.7
20°	1063.5	1060.6	1046.3	1027.8	1017.8
22.5°	1022.1	1022.1	1004.9	980.7	970.7
25°	983.5	977.8	962.1	927.8	902.2
27.5°	939.3	930.7	913.6	865.0	835.1
30°	890.7	886.5	862.2	799.4	776.5
32.5°	845.1	837.9	812.2	746.6	728.0
35°	798.0	792.2	753.7	696.6	679.5
37.5°	750.8	743.7	695.2	649.5	628.1
40°	703.7	695.2	642.4	601.0	578.1
42.5°	659.5	648.1	596.7	552.4	526.7
45°	612.4	599.5	548.1	502.5	482.5
47.5°	565.3	553.9	506.7	459.6	436.8
50°	515.3	505.3	462.5	415.4	391.1
52.5°	473.9	458.2	416.8	369.7	349.7
55°	425.4	412.5	374.0	329.7	312.6
57.5°	381.1	368.3	332.6	291.2	276.9
60°	339.7	321.2	291.2	255.5	244.1
62.5°	294.1	279.8	254.1	224.1	238.4
65°	252.7	238.4	215.5	219.8	182.7
67.5°	207.0	199.8	179.9	159.9	154.2
70°	168.4	159.9	152.7	131.3	125.6
72.5°	134.2	125.6	115.6	104.2	99.9
75°	101.3	94.2	88.5	84.2	92.8
77.5°	69.9	67.1	62.8	58.5	57.1
80°	45.7	44.3	42.8	41.4	40.0
82.5°	27.1	27.1	27.1	27.1	27.1
85°	14.3	15.7	17.1	18.6	20.0
87.5°	8.6	8.6	10.0	11.4	12.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)