

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: P562214

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-93-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P562214
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-93-87-EDD-90
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2323.0 lumens
Efficiency: N/A
Efficacy: 99.3 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

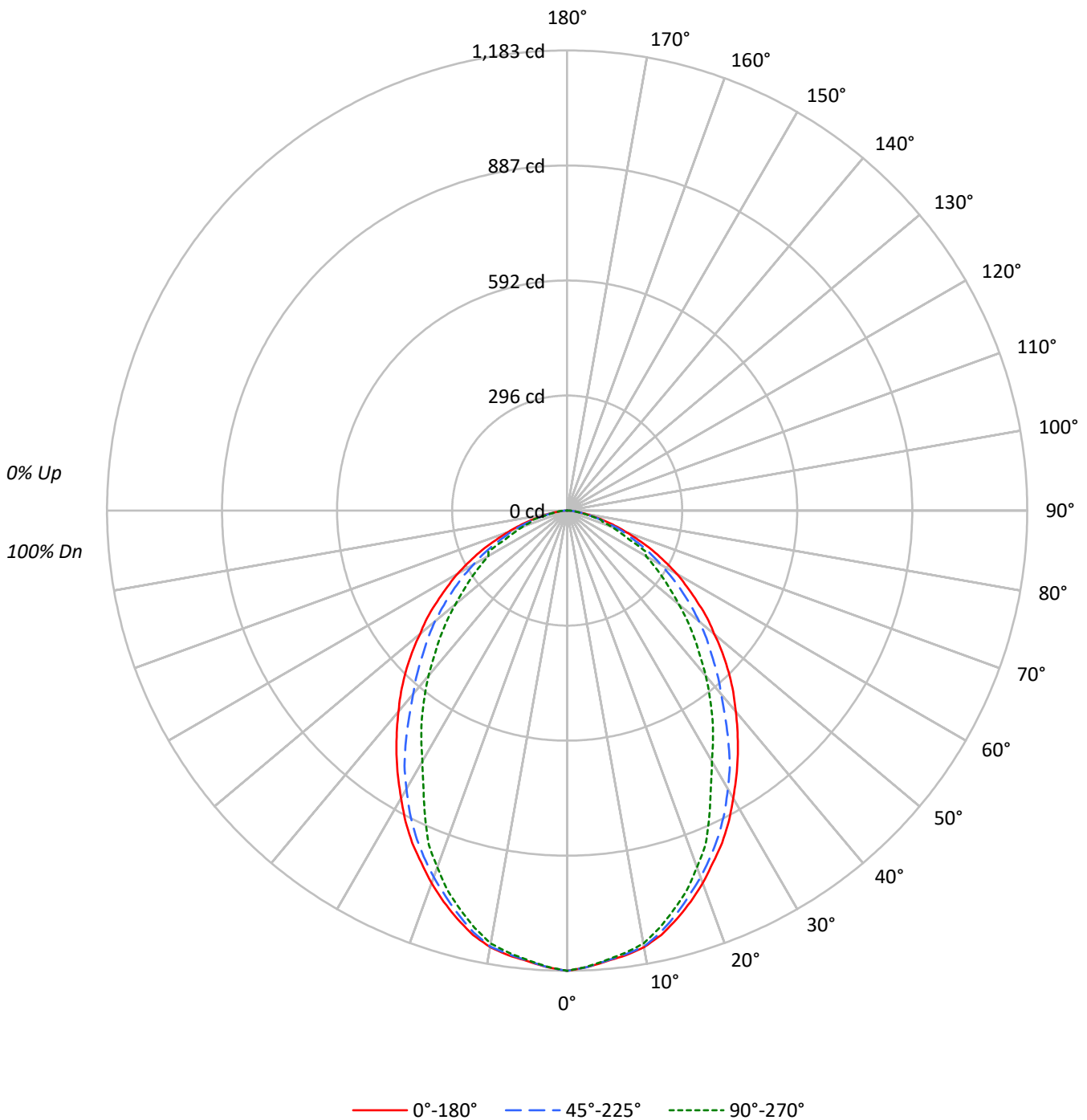
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	50	30	10	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	1592	1592	1592
5°	1571	1569	1567
10°	1557	1555	1544
15°	1515	1500	1479
20°	1459	1436	1397
25°	1399	1369	1284
30°	1326	1284	1156
35°	1256	1186	1070
40°	1185	1081	973
45°	1117	1000	880
50°	1034	928	785
55°	956	841	703
60°	876	751	629
65°	771	658	557
70°	635	576	474
75°	505	441	462
80°	339	318	297
85°	211	253	296

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1117 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.1	4.7
10°-20°	302.3	13.0
20°-30°	418.5	18.0
30°-40°	446.3	19.2
40°-50°	407.1	17.5
50°-60°	318.9	13.7
60°-70°	207.9	8.9
70°-80°	92.1	4.0
80°-90°	19.8	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°	831.0	35.8
0°-40°	1277.2	55.0
0°-60°	2003.3	86.2
0°-90°	2323.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2323.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1183	1183	1183	1183	1183	
5°	1163	1161	1161	1160	1160	110
15°	1088	1088	1077	1066	1062	306
25°	942	937	922	889	865	433
35°	765	759	722	668	651	478
45°	587	575	525	482	462	452
55°	408	395	358	316	300	366
65°	242	228	207	211	175	239
75°	97	90	85	81	89	104
85°	14	15	16	18	19	19
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	<i>1183.3</i>	<i>1183.3</i>	<i>1183.3</i>	<i>1183.3</i>	<i>1183.3</i>
2.5°	<i>1175.1</i>	1175.1	1175.1	1173.7	1173.7
5°	<i>1162.8</i>	1161.4	1161.4	1160.0	1160.0
7.5°	<i>1153.2</i>	1151.8	1150.5	1149.1	1146.4
10°	<i>1139.5</i>	1139.5	1138.2	1131.3	1130.0
12.5°	<i>1117.6</i>	1116.3	1110.8	1101.2	1098.5
15°	<i>1087.5</i>	1087.5	1076.6	1065.7	1061.6
17.5°	<i>1054.7</i>	1053.3	1039.7	1028.7	1023.3
20°	<i>1019.1</i>	1016.4	1002.7	984.9	975.4
22.5°	<i>979.5</i>	979.5	963.1	939.8	930.2
25°	<i>942.5</i>	937.1	922.0	889.2	864.6
27.5°	<i>900.1</i>	891.9	875.5	829.0	800.3
30°	<i>853.6</i>	849.5	826.3	766.1	744.2
32.5°	<i>809.8</i>	803.0	778.4	715.5	697.7
35°	<i>764.7</i>	759.2	722.3	667.6	651.2
37.5°	<i>719.6</i>	712.7	666.2	622.4	601.9
40°	<i>674.4</i>	666.2	615.6	575.9	554.0
42.5°	<i>632.0</i>	621.1	571.8	529.4	504.8
45°	<i>586.9</i>	574.6	525.3	481.5	462.4
47.5°	<i>541.7</i>	530.8	485.6	440.5	418.6
50°	<i>493.8</i>	484.3	443.2	398.1	374.8
52.5°	<i>454.2</i>	439.1	399.5	354.3	335.2
55°	<i>407.7</i>	395.3	358.4	316.0	299.6
57.5°	<i>365.3</i>	352.9	318.7	279.1	265.4
60°	<i>325.6</i>	307.8	279.1	244.9	233.9
62.5°	<i>281.8</i>	268.1	243.5	214.8	228.5
65°	<i>242.1</i>	228.5	206.6	210.7	175.1
67.5°	<i>198.4</i>	191.5	172.4	153.2	147.7
70°	<i>161.4</i>	153.2	146.4	125.9	120.4
72.5°	<i>128.6</i>	120.4	110.8	99.9	95.8
75°	<i>97.1</i>	90.3	84.8	80.7	88.9
77.5°	<i>67.0</i>	64.3	60.2	56.1	54.7
80°	<i>43.8</i>	42.4	41.0	39.7	38.3
82.5°	<i>26.0</i>	26.0	26.0	26.0	26.0
85°	<i>13.7</i>	15.0	16.4	17.8	19.2
87.5°	<i>8.2</i>	8.2	9.6	10.9	12.3
90°	<i>0.0</i>	0.0	0.0	0.0	0.0

(END OF REPORT)