

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: P561037

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-81-96-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561037
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-12-4-LD4-1LO-40-UNV-81-96-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

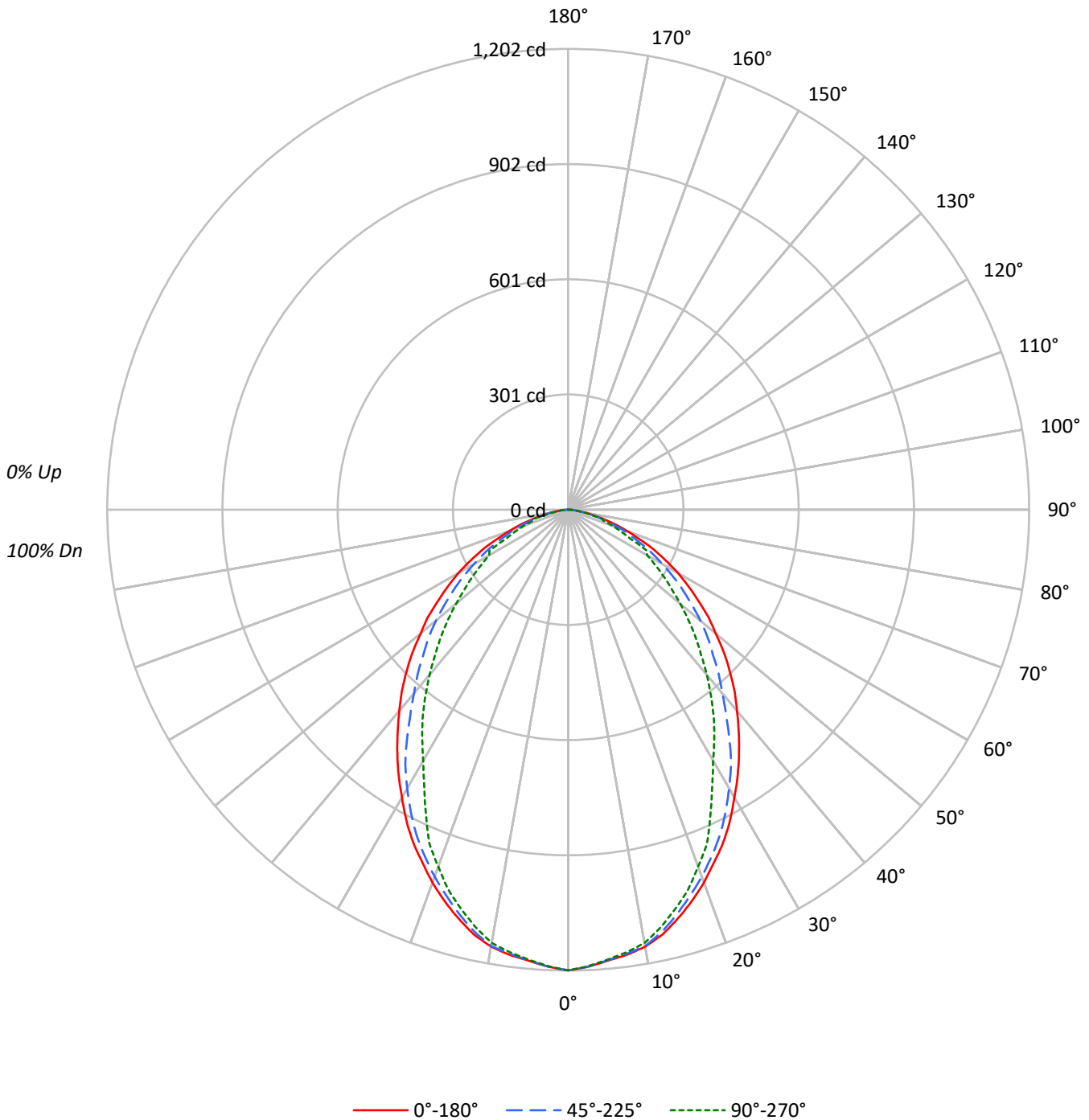
Lumens per Lamp: N/A
Luminaire Lumens: 2359.0 lumens
Efficiency: N/A
Efficacy: 100.8 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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°	3233	3233	3233
5°	3190	3186	3182
10°	3162	3158	3136
15°	3077	3046	3003
20°	2964	2916	2836
25°	2842	2780	2607
30°	2694	2607	2348
35°	2551	2410	2172
40°	2406	2196	1976
45°	2268	2030	1787
50°	2099	1884	1593
55°	1942	1708	1427
60°	1779	1525	1279
65°	1566	1336	1132
70°	1290	1169	961
75°	1025	895	939
80°	690	646	603
85°	429	516	599

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2268 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.9	4.7
10°-20°	307.0	13.0
20°-30°	425.0	18.0
30°-40°	453.2	19.2
40°-50°	413.4	17.5
50°-60°	323.9	13.7
60°-70°	211.1	8.9
70°-80°	93.5	4.0
80°-90°	20.1	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°	843.8	35.8
0°-40°	1297.0	55.0
0°-60°	2034.3	86.2
0°-90°	2359.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2359.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1202	1202	1202	1202	1202	
5°	1181	1179	1179	1178	1178	112
15°	1104	1104	1093	1082	1078	310
25°	957	952	936	903	878	439
35°	777	771	734	678	661	485
45°	596	584	533	489	470	459
55°	414	402	364	321	304	371
65°	246	232	210	214	178	242
75°	99	92	86	82	90	106
85°	14	15	17	18	19	19
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1201.6	1201.6	1201.6	1201.6	1201.6
2.5°	1193.3	1193.3	1193.3	1191.9	1191.9
5°	1180.8	1179.4	1179.4	1178.0	1178.0
7.5°	1171.1	1169.7	1168.3	1166.9	1164.1
10°	1157.2	1157.2	1155.8	1148.9	1147.5
12.5°	1135.0	1133.6	1128.0	1118.3	1115.5
15°	1104.4	1104.4	1093.3	1082.2	1078.0
17.5°	1071.1	1069.7	1055.8	1044.7	1039.1
20°	1034.9	1032.2	1018.3	1000.2	990.5
22.5°	994.7	994.7	978.0	954.4	944.6
25°	957.1	951.6	936.3	903.0	878.0
27.5°	914.1	905.7	889.1	841.8	812.7
30°	866.9	862.7	839.1	777.9	755.7
32.5°	822.4	815.5	790.4	726.5	708.5
35°	776.6	771.0	733.5	677.9	661.3
37.5°	730.7	723.8	676.5	632.1	611.2
40°	684.9	676.5	625.1	584.8	562.6
42.5°	641.8	630.7	580.7	537.6	512.6
45°	596.0	583.5	533.4	489.0	469.5
47.5°	550.1	539.0	493.2	447.3	425.1
50°	501.5	491.8	450.1	404.3	380.6
52.5°	461.2	445.9	405.6	359.8	340.3
55°	414.0	401.5	364.0	320.9	304.2
57.5°	370.9	358.4	323.7	283.4	269.5
60°	330.6	312.6	283.4	248.7	237.6
62.5°	286.2	272.3	247.3	218.1	232.0
65°	245.9	232.0	209.8	213.9	177.8
67.5°	201.4	194.5	175.0	155.6	150.0
70°	163.9	155.6	148.6	127.8	122.2
72.5°	130.6	122.2	112.5	101.4	97.2
75°	98.6	91.7	86.1	82.0	90.3
77.5°	68.1	65.3	61.1	57.0	55.6
80°	44.5	43.1	41.7	40.3	38.9
82.5°	26.4	26.4	26.4	26.4	26.4
85°	13.9	15.3	16.7	18.1	19.4
87.5°	8.3	8.3	9.7	11.1	12.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)