

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: P518041

Luminaire Tested: HVL8-4-LD4-1LO-50-UNV-O-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P518041
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1LO-50-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2654.0 lumens
Efficiency: N/A
Efficacy: 115.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

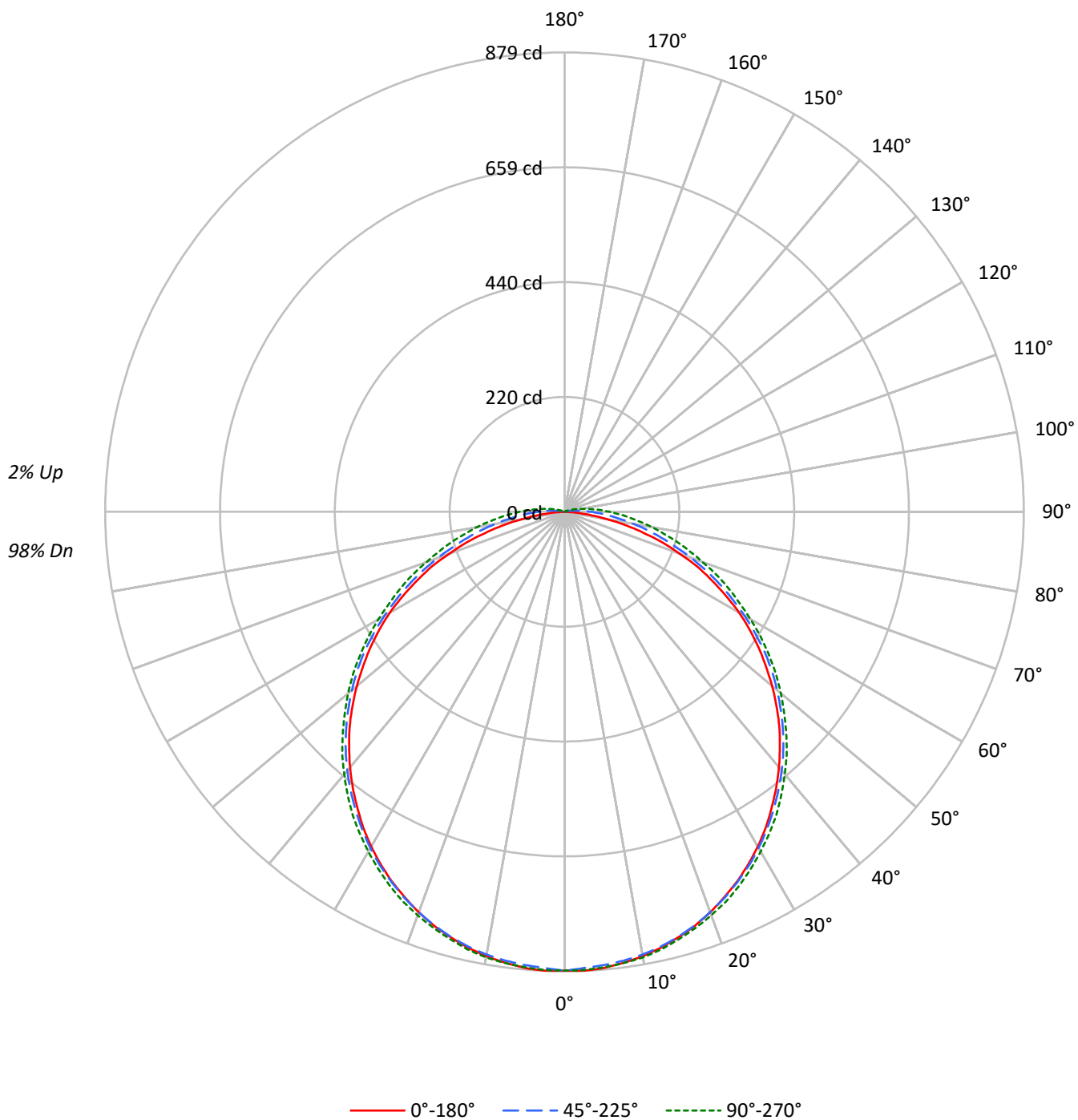
Input Watts (W): 23
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3543	3543	3543
5°	3536	3464	3468
10°	3513	3402	3398
15°	3482	3334	3314
20°	3450	3257	3234
25°	3411	3178	3151
30°	3366	3094	3058
35°	3309	3002	2965
40°	3250	2904	2857
45°	3187	2799	2740
50°	3104	2677	2615
55°	3014	2542	2477
60°	2907	2368	2315
65°	2734	2173	2155
70°	2485	1943	1969
75°	2131	1692	1800
80°	1604	1445	1645
85°	856	1196	1498

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3187 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.1	3.1
10°-20°	238.3	9.0
20°-30°	361.5	13.6
30°-40°	437.1	16.5
40°-50°	456.1	17.2
50°-60°	417.1	15.7
60°-70°	325.1	12.2
70°-80°	203.4	7.7
80°-90°	92.4	3.5
90°-100°	31.0	1.2
100°-110°	7.8	0.3
110°-120°	1.2	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°	682.9	25.7
0°-40°	1120.0	42.2
0°-60°	1993.2	75.1
0°-90°	2614.1	98.5
90°-120°	39.9	1.5
90°-150°	39.9	1.5
90°-180°	40.0	1.5
0°-180°	2654.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	878	878	878	878	878	
5°	876	874	870	874	874	83
15°	843	844	842	846	846	238
25°	781	781	782	789	790	360
35°	691	694	697	704	707	433
45°	582	587	591	597	600	448
55°	454	459	468	474	478	405
65°	312	317	328	341	347	309
75°	158	168	192	215	223	168
85°	27	50	87	115	125	35
90°	0	19	51	77	86	1
95°	0	5	26	48	56	0
105°	0	1	4	13	17	0
115°	1	1	1	2	3	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	877.8	877.8	877.8	877.8	877.8
2.5°	878.8	877.6	873.6	877.6	877.4
5°	875.9	874.3	870.3	874.5	874.5
7.5°	870.1	869.5	866.0	870.7	870.7
10°	863.3	863.1	860.2	865.4	865.6
12.5°	853.8	854.6	851.9	856.9	857.5
15°	842.6	844.1	841.8	846.5	846.3
17.5°	830.4	831.2	829.6	834.9	834.7
20°	815.3	816.3	815.1	820.7	821.3
22.5°	798.5	800.0	799.8	805.6	807.2
25°	780.7	781.4	782.2	788.8	790.0
27.5°	761.1	762.1	763.6	769.6	770.8
30°	739.6	741.2	742.9	749.1	750.7
32.5°	716.8	718.4	720.5	728.6	729.4
35°	691.1	694.2	697.1	704.2	707.1
37.5°	665.5	669.4	672.1	679.5	681.8
40°	638.4	642.3	646.6	654.5	656.0
42.5°	610.0	614.6	619.7	626.8	629.3
45°	581.5	586.6	591.4	597.2	600.1
47.5°	550.6	555.8	561.6	568.2	570.1
50°	518.8	524.8	531.0	537.2	540.5
52.5°	486.1	493.3	500.3	507.0	510.1
55°	453.8	459.2	467.7	474.5	477.6
57.5°	420.3	424.8	432.5	443.7	445.3
60°	386.1	390.3	398.1	407.2	411.0
62.5°	348.5	354.1	362.3	373.9	377.2
65°	311.8	317.2	328.2	341.2	346.6
67.5°	276.5	278.3	292.4	306.0	314.7
70°	234.7	241.7	258.0	274.8	281.4
72.5°	198.6	205.7	223.7	243.3	251.6
75°	157.9	167.6	192.0	215.0	223.1
77.5°	122.1	132.8	163.1	186.2	195.5
80°	85.3	102.0	134.9	161.0	171.1
82.5°	53.6	74.3	109.5	136.8	145.7
85°	27.3	50.5	86.7	114.6	124.8
87.5°	7.2	32.7	67.5	94.2	104.5
90°	0.2	18.8	51.1	76.8	86.1
92.5°	0.2	10.6	38.1	61.0	70.6
95°	0.2	5.0	26.5	48.0	55.5
97.5°	0.2	2.1	18.2	36.2	43.7
100°	0.2	1.0	11.6	26.3	32.7
102.5°	0.4	0.6	7.2	18.8	24.0
105°	0.4	0.6	4.3	12.8	17.2
107.5°	0.4	0.6	2.5	8.7	11.8
110°	0.6	0.6	1.4	5.4	7.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	0.6	0.8	3.5	5.2
115°	0.6	0.6	0.8	2.3	3.3
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)