

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: P517933

Luminaire Tested: HVL8-2-LD4-2LO-30-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: P517933
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2LO-30-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2026.0 lumens
Efficiency: N/A
Efficacy: 87.7 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

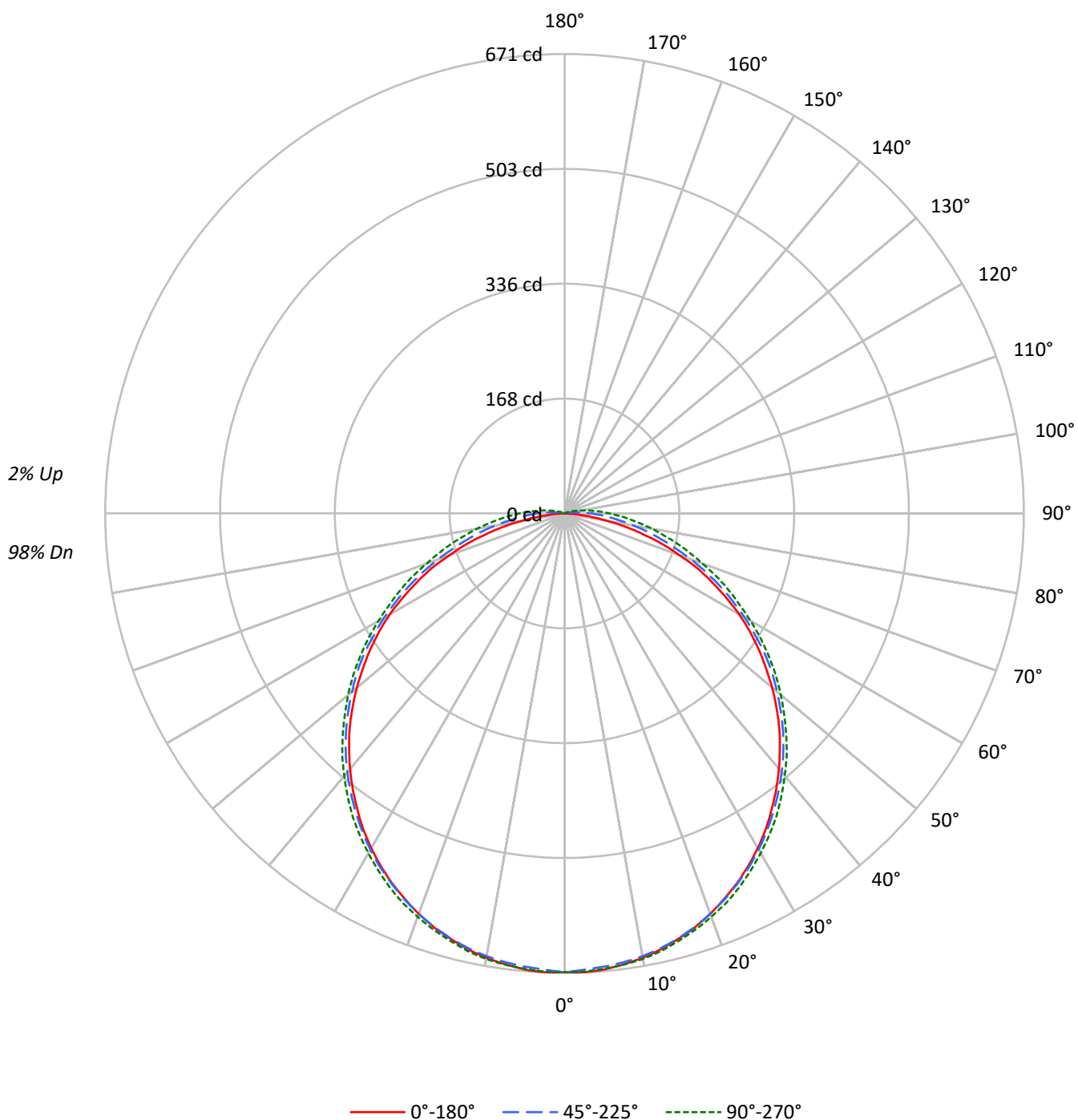
Input Watts (W): 23.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5410	5410	5410
5°	5380	5275	5294
10°	5324	5168	5188
15°	5258	5052	5061
20°	5190	4923	4937
25°	5110	4792	4811
30°	5021	4653	4668
35°	4913	4502	4527
40°	4800	4343	4361
45°	4678	4171	4184
50°	4524	3974	3992
55°	4357	3759	3781
60°	4159	3484	3534
65°	3859	3178	3290
70°	3440	2822	3005
75°	2867	2432	2748
80°	2055	2049	2511
85°	991	1660	2288

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4678 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.4	3.1
10°-20°	181.9	9.0
20°-30°	276.0	13.6
30°-40°	333.7	16.5
40°-50°	348.2	17.2
50°-60°	318.4	15.7
60°-70°	248.2	12.2
70°-80°	155.3	7.7
80°-90°	70.5	3.5
90°-100°	23.6	1.2
100°-110°	5.9	0.3
110°-120°	0.9	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°	521.3	25.7
0°-40°	855.0	42.2
0°-60°	1521.6	75.1
0°-90°	1995.5	98.5
90°-120°	30.5	1.5
90°-150°	30.5	1.5
90°-180°	31.0	1.5
0°-180°	2026.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	670	670	670	670	670	
5°	669	667	664	668	668	63
15°	643	644	643	646	646	182
25°	596	596	597	602	603	275
35°	528	530	532	538	540	330
45°	444	448	452	456	458	342
55°	346	350	357	362	365	309
65°	238	242	250	260	265	236
75°	120	128	147	164	170	128
85°	21	38	66	88	95	26
90°	0	14	39	59	66	1
95°	0	4	20	37	42	0
105°	0	0	3	10	13	0
115°	0	0	1	2	2	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°	670.1	670.1	670.1	670.1	670.1
2.5°	670.9	669.9	666.9	669.9	669.8
5°	668.7	667.4	664.4	667.6	667.6
7.5°	664.2	663.8	661.1	664.7	664.7
10°	659.0	658.9	656.7	660.6	660.8
12.5°	651.8	652.4	650.3	654.1	654.6
15°	643.2	644.3	642.6	646.2	646.1
17.5°	633.9	634.5	633.3	637.4	637.2
20°	622.4	623.2	622.2	626.5	627.0
22.5°	609.6	610.7	610.5	614.9	616.2
25°	596.0	596.5	597.1	602.2	603.1
27.5°	581.0	581.8	582.9	587.5	588.4
30°	564.6	565.8	567.1	571.8	573.1
32.5°	547.2	548.4	550.0	556.2	556.8
35°	527.6	530.0	532.2	537.5	539.8
37.5°	508.0	511.0	513.1	518.8	520.5
40°	487.3	490.3	493.6	499.6	500.7
42.5°	465.7	469.1	473.1	478.5	480.4
45°	443.9	447.8	451.5	455.9	458.1
47.5°	420.3	424.3	428.7	433.8	435.2
50°	396.0	400.6	405.3	410.1	412.6
52.5°	371.1	376.6	382.0	387.0	389.4
55°	346.4	350.5	357.0	362.2	364.6
57.5°	320.8	324.3	330.1	338.7	339.9
60°	294.8	297.9	303.9	310.9	313.7
62.5°	266.0	270.3	276.6	285.4	288.0
65°	238.1	242.2	250.5	260.5	264.6
67.5°	211.0	212.5	223.2	233.6	240.3
70°	179.1	184.5	197.0	209.8	214.8
72.5°	151.6	157.0	170.8	185.8	192.1
75°	120.5	127.9	146.6	164.1	170.3
77.5°	93.2	101.4	124.5	142.2	149.3
80°	65.1	77.9	103.0	122.9	130.6
82.5°	40.9	56.7	83.6	104.4	111.2
85°	20.9	38.5	66.2	87.5	95.3
87.5°	5.5	25.0	51.5	71.9	79.8
90°	0.2	14.4	39.0	58.6	65.7
92.5°	0.2	8.1	29.1	46.6	53.9
95°	0.2	3.8	20.2	36.6	42.3
97.5°	0.2	1.6	13.9	27.6	33.3
100°	0.2	0.8	8.8	20.1	25.0
102.5°	0.3	0.5	5.5	14.4	18.3
105°	0.3	0.5	3.3	9.8	13.1
107.5°	0.3	0.5	1.9	6.6	9.0
110°	0.5	0.5	1.1	4.1	6.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	0.5	0.6	2.7	3.9
115°	0.5	0.5	0.6	1.7	2.5
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)