

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: P518033

Luminaire Tested: HVL8-4-LD4-1LO-35-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: P518033
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1LO-35-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2583.0 lumens
Efficiency: N/A
Efficacy: 112.3 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

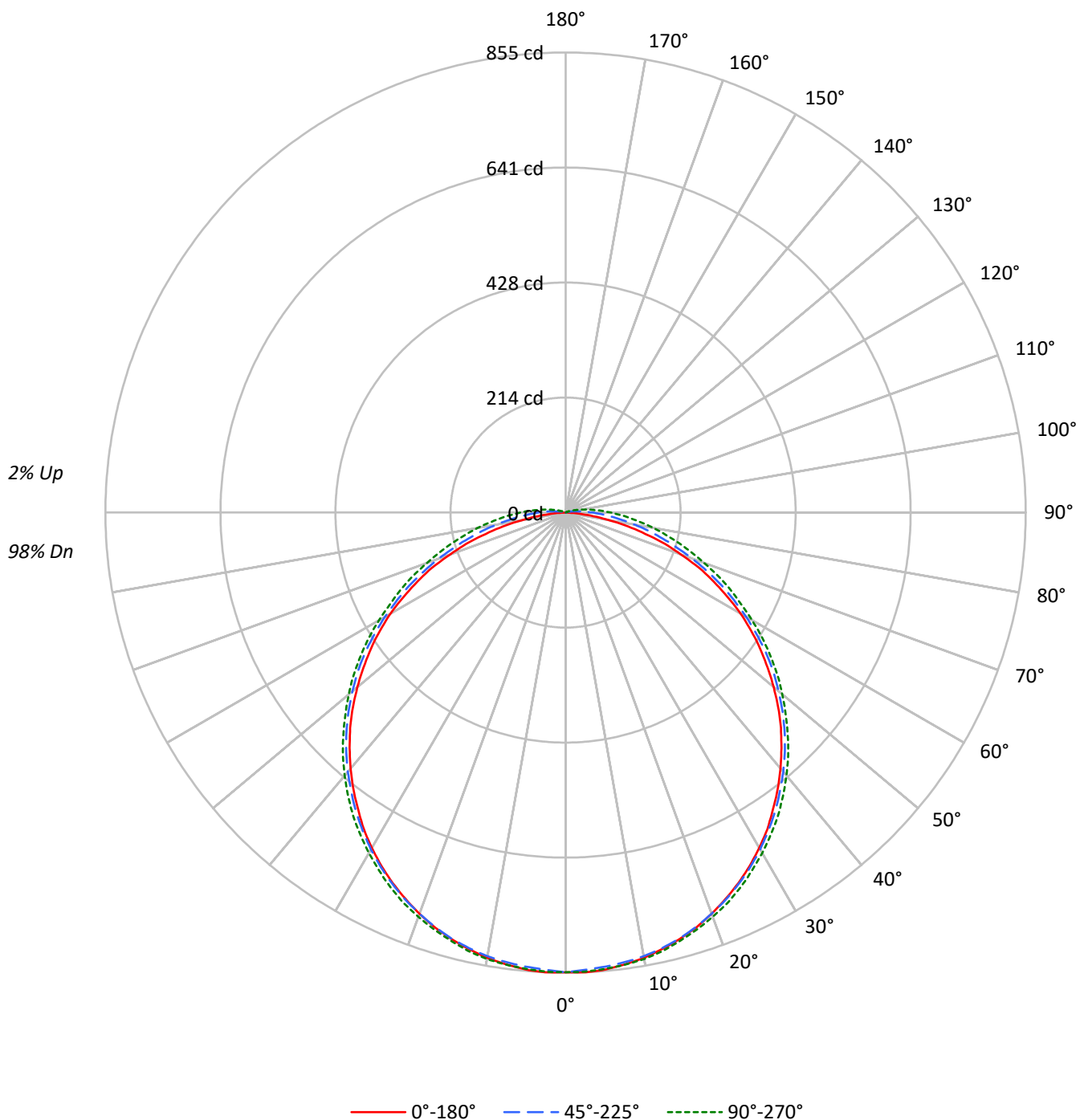
Input Watts (W): 23
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P518033

CATALOG NUMBER: HVL8-4-LD4-1LO-35-UNV-O-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P518033

CATALOG NUMBER: HVL8-4-LD4-1LO-35-UNV-O-EDD-90

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°	3448	3448	3448
5°	3442	3372	3375
10°	3419	3311	3307
15°	3389	3244	3226
20°	3358	3170	3147
25°	3319	3093	3067
30°	3276	3011	2976
35°	3220	2921	2886
40°	3163	2827	2780
45°	3101	2724	2667
50°	3021	2605	2545
55°	2934	2474	2410
60°	2830	2305	2253
65°	2661	2115	2097
70°	2419	1891	1916
75°	2074	1647	1751
80°	1561	1407	1602
85°	834	1164	1457

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3101 cd/sqm

TEST NUMBER: P518033

CATALOG NUMBER: HVL8-4-LD4-1LO-35-UNV-O-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	80.8	3.1
10°-20°	231.9	9.0
20°-30°	351.9	13.6
30°-40°	425.5	16.5
40°-50°	443.9	17.2
50°-60°	405.9	15.7
60°-70°	316.4	12.2
70°-80°	197.9	7.7
80°-90°	89.9	3.5
90°-100°	30.1	1.2
100°-110°	7.6	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°	664.6	25.7
0°-40°	1090.1	42.2
0°-60°	1939.9	75.1
0°-90°	2544.1	98.5
90°-120°	38.9	1.5
90°-150°	38.9	1.5
90°-180°	39.0	1.5
0°-180°	2583.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	854	854	854	854	854	
5°	852	851	847	851	851	81
15°	820	822	819	824	824	231
25°	760	760	761	768	769	350
35°	673	676	678	685	688	421
45°	566	571	576	581	584	436
55°	442	447	455	462	465	395
65°	304	309	319	332	337	300
75°	154	163	187	209	217	164
85°	27	49	84	112	121	34
90°	0	18	50	75	84	1
95°	0	5	26	47	54	0
105°	0	1	4	12	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

TEST NUMBER: P518033

CATALOG NUMBER: HVL8-4-LD4-1LO-35-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	854.3	854.3	854.3	854.3	854.3
2.5°	855.3	854.1	850.3	854.1	853.9
5°	852.5	850.9	847.1	851.1	851.1
7.5°	846.8	846.2	842.8	847.5	847.5
10°	840.2	840.0	837.2	842.2	842.4
12.5°	830.9	831.7	829.1	834.0	834.6
15°	820.1	821.5	819.3	823.9	823.7
17.5°	808.2	809.0	807.4	812.6	812.4
20°	793.5	794.5	793.3	798.7	799.3
22.5°	777.2	778.6	778.4	784.0	785.6
25°	759.8	760.5	761.3	767.7	768.9
27.5°	740.7	741.7	743.1	749.0	750.2
30°	719.8	721.4	723.0	729.0	730.6
32.5°	697.6	699.2	701.2	709.1	709.9
35°	672.6	675.7	678.5	685.3	688.2
37.5°	647.7	651.5	654.1	661.4	663.6
40°	621.3	625.1	629.3	637.0	638.4
42.5°	593.7	598.1	603.2	610.0	612.4
45°	565.9	570.9	575.6	581.2	584.0
47.5°	535.9	540.9	546.6	553.0	554.8
50°	504.9	510.7	516.8	522.8	526.0
52.5°	473.1	480.1	487.0	493.4	496.4
55°	441.7	446.9	455.1	461.8	464.8
57.5°	409.0	413.5	420.9	431.8	433.4
60°	375.8	379.8	387.5	396.3	400.0
62.5°	339.1	344.6	352.6	363.9	367.1
65°	303.5	308.7	319.4	332.1	337.3
67.5°	269.1	270.9	284.6	297.9	306.3
70°	228.4	235.2	251.1	267.4	273.9
72.5°	193.3	200.2	217.7	236.8	244.9
75°	153.7	163.1	186.9	209.2	217.1
77.5°	118.8	129.3	158.7	181.3	190.3
80°	83.0	99.3	131.3	156.7	166.6
82.5°	52.2	72.3	106.5	133.1	141.8
85°	26.6	49.1	84.4	111.6	121.4
87.5°	7.0	31.8	65.7	91.6	101.7
90°	0.2	18.3	49.7	74.7	83.8
92.5°	0.2	10.3	37.1	59.4	68.7
95°	0.2	4.8	25.8	46.7	54.0
97.5°	0.2	2.0	17.7	35.2	42.5
100°	0.2	1.0	11.3	25.6	31.8
102.5°	0.4	0.6	7.0	18.3	23.4
105°	0.4	0.6	4.2	12.5	16.7
107.5°	0.4	0.6	2.4	8.5	11.5
110°	0.6	0.6	1.4	5.2	7.7

TEST NUMBER: P518033

CATALOG NUMBER: HVL8-4-LD4-1LO-35-UNV-O-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	0.6	0.8	3.4	5.0
115°	0.6	0.6	0.8	2.2	3.2
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)