

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: P518113

Luminaire Tested: HVL8-4-LD4-3HI-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: P518113
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3HI-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: 12825.9 lumens
Efficiency: N/A
Efficacy: 101.9 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

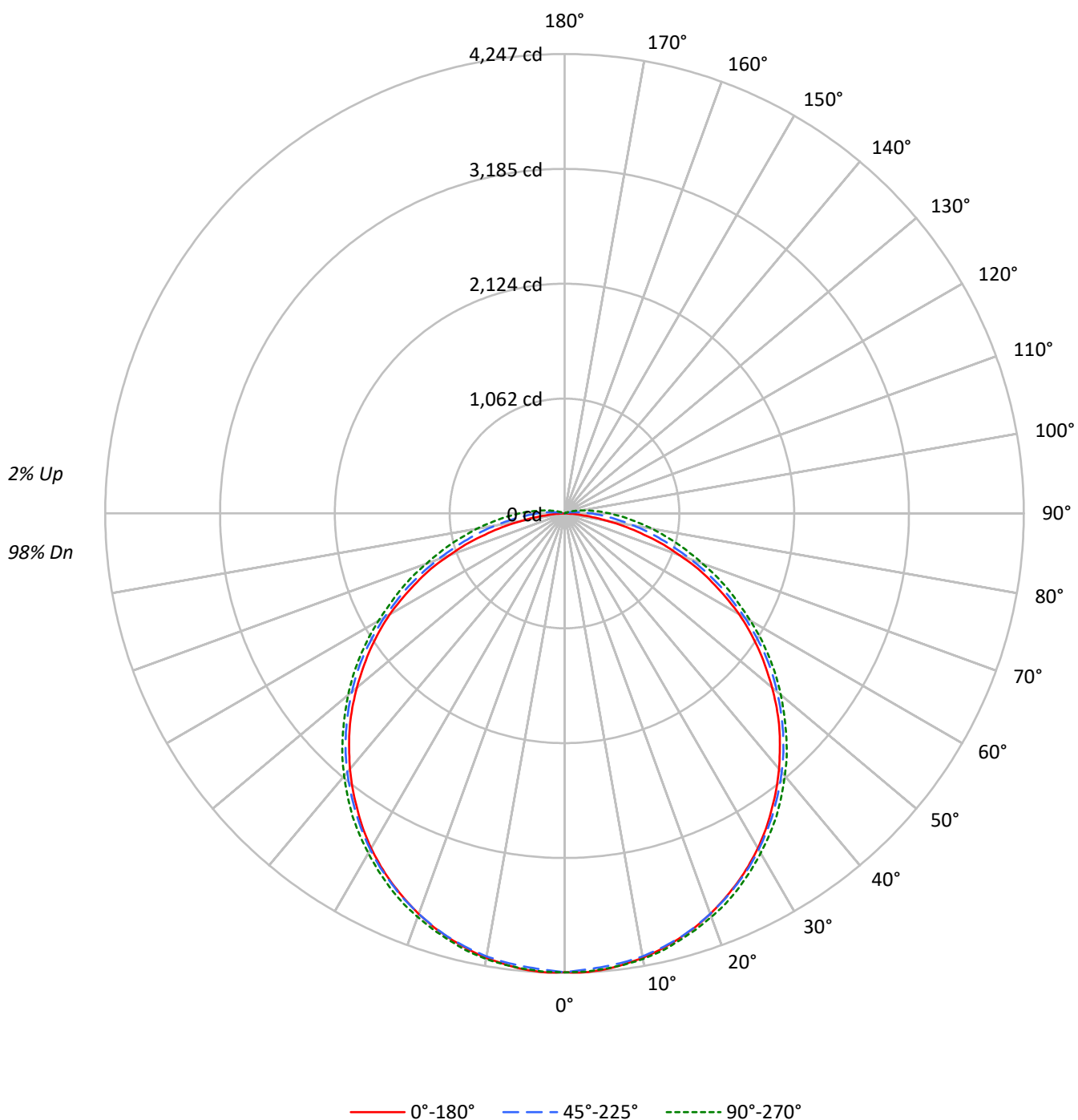
Input Watts (W): 125.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17123	17123	17123
5°	17090	16741	16757
10°	16976	16441	16421
15°	16829	16110	16019
20°	16672	15739	15627
25°	16484	15358	15229
30°	16267	14952	14777
35°	15992	14506	14329
40°	15706	14037	13807
45°	15399	13525	13243
50°	14998	12934	12637
55°	14566	12285	11968
60°	14050	11444	11188
65°	13213	10502	10414
70°	12008	9393	9514
75°	10298	8177	8697
80°	7746	6985	7950
85°	4141	5779	7239

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 15399 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	401.4	3.1
10°-20°	1151.5	9.0
20°-30°	1747.2	13.6
30°-40°	2112.7	16.5
40°-50°	2204.3	17.2
50°-60°	2015.4	15.7
60°-70°	1571.1	12.2
70°-80°	982.8	7.7
80°-90°	446.4	3.5
90°-100°	149.6	1.2
100°-110°	37.6	0.3
110°-120°	5.9	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°	3300.1	25.7
0°-40°	5412.8	42.2
0°-60°	9632.5	75.1
0°-90°	12632.9	98.5
90°-120°	193.1	1.5
90°-150°	193.1	1.5
90°-180°	193.0	1.5
0°-180°	12825.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4242	4242	4242	4242	4242	
5°	4233	4225	4206	4226	4226	402
15°	4072	4079	4068	4091	4090	1150
25°	3773	3776	3780	3812	3818	1739
35°	3340	3355	3369	3403	3417	2091
45°	2810	2835	2858	2886	2900	2165
55°	2193	2219	2260	2293	2308	1959
65°	1507	1533	1586	1649	1675	1491
75°	763	810	928	1039	1078	813
85°	132	244	419	554	603	167
90°	1	91	247	371	416	5
95°	1	24	128	232	268	1
105°	2	3	21	62	83	2
115°	3	3	4	11	16	2
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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CATALOG NUMBER: HVL8-4-LD4-3HI-35-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4242.1	4242.1	4242.1	4242.1	4242.1
2.5°	4247.1	4241.1	4222.1	4241.1	4240.1
5°	4233.1	4225.1	4206.1	4226.1	4226.1
7.5°	4205.1	4202.1	4185.1	4208.1	4208.1
10°	4172.1	4171.1	4157.1	4182.1	4183.1
12.5°	4126.1	4130.1	4117.1	4141.1	4144.1
15°	4072.1	4079.1	4068.1	4091.1	4090.1
17.5°	4013.1	4017.1	4009.1	4035.1	4034.1
20°	3940.1	3945.1	3939.1	3966.1	3969.1
22.5°	3859.1	3866.1	3865.1	3893.1	3901.1
25°	3773.1	3776.1	3780.1	3812.1	3818.1
27.5°	3678.1	3683.1	3690.1	3719.1	3725.1
30°	3574.1	3582.1	3590.1	3620.1	3628.1
32.5°	3464.1	3472.1	3482.1	3521.1	3525.1
35°	3340.1	3355.1	3369.1	3403.1	3417.1
37.5°	3216.1	3235.1	3248.1	3284.1	3295.1
40°	3085.0	3104.0	3125.0	3163.0	3170.0
42.5°	2948.0	2970.0	2995.0	3029.0	3041.0
45°	2810.0	2835.0	2858.0	2886.0	2900.0
47.5°	2661.0	2686.0	2714.0	2746.0	2755.0
50°	2507.0	2536.0	2566.0	2596.0	2612.0
52.5°	2349.0	2384.0	2418.0	2450.0	2465.0
55°	2193.0	2219.0	2260.0	2293.0	2308.0
57.5°	2031.0	2053.0	2090.0	2144.0	2152.0
60°	1866.0	1886.0	1924.0	1968.0	1986.0
62.5°	1684.0	1711.0	1751.0	1807.0	1823.0
65°	1507.0	1533.0	1586.0	1649.0	1675.0
67.5°	1336.0	1345.0	1413.0	1479.0	1521.0
70°	1134.0	1168.0	1247.0	1328.0	1360.0
72.5°	960.0	994.0	1081.0	1176.0	1216.0
75°	763.0	810.0	928.0	1039.0	1078.0
77.5°	590.0	642.0	788.0	900.0	945.0
80°	412.0	493.0	652.0	778.0	827.0
82.5°	259.0	359.0	529.0	661.0	704.0
85°	132.0	244.0	419.0	554.0	603.0
87.5°	35.0	158.0	326.0	455.0	505.0
90°	1.0	91.0	247.0	371.0	416.0
92.5°	1.0	51.0	184.0	295.0	341.0
95°	1.0	24.0	128.0	232.0	268.0
97.5°	1.0	10.0	88.0	175.0	211.0
100°	1.0	5.0	56.0	127.0	158.0
102.5°	2.0	3.0	35.0	91.0	116.0
105°	2.0	3.0	21.0	62.0	83.0
107.5°	2.0	3.0	12.0	42.0	57.0
110°	3.0	3.0	7.0	26.0	38.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.0	3.0	4.0	17.0	25.0
115°	3.0	3.0	4.0	11.0	16.0
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)