

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: P518108

Luminaire Tested: HVL8-4-LD4-3HI-30-UNV-C-EDD

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: P518108
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3HI-30-UNV-C-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

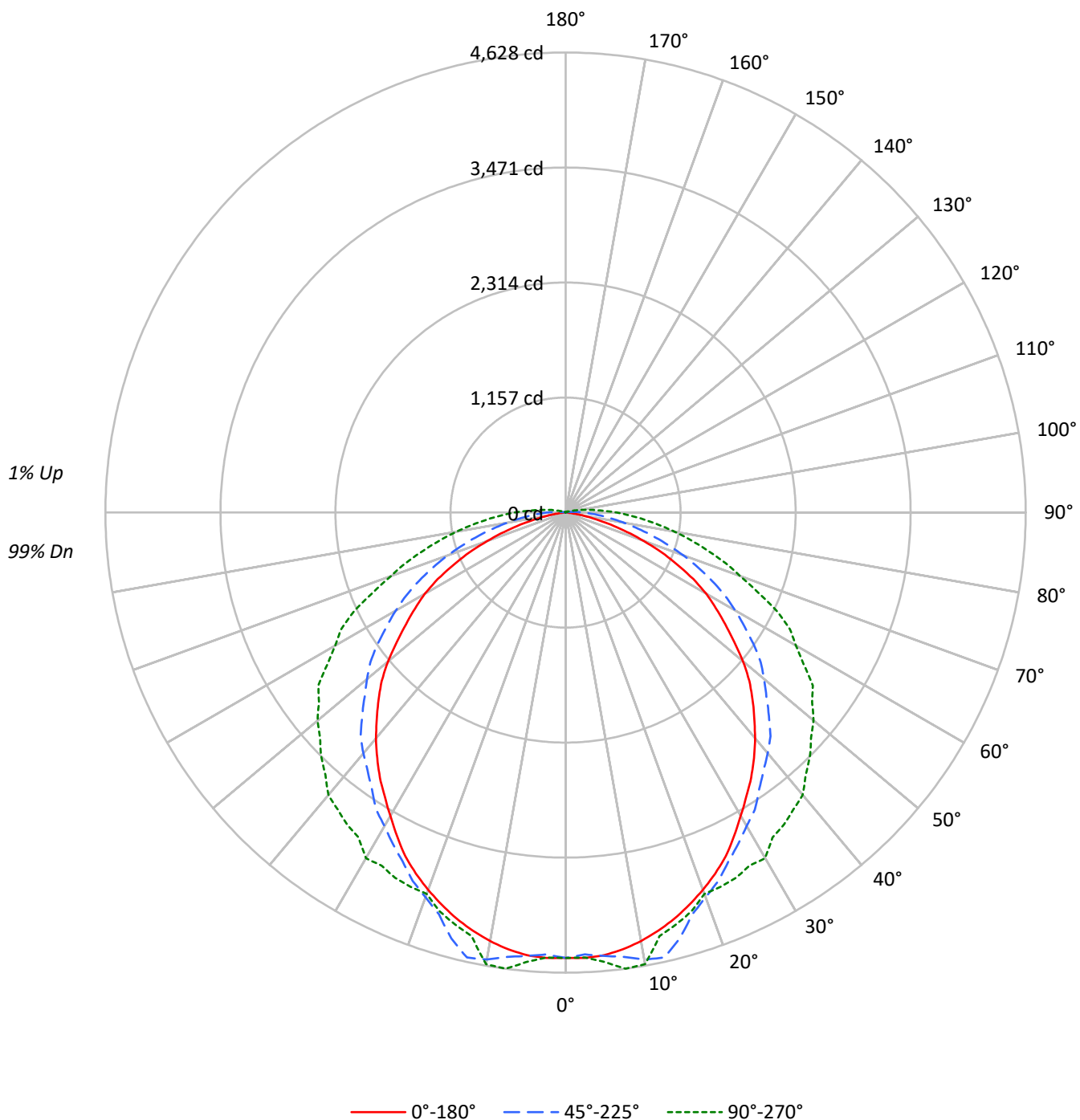
Lumens per Lamp: N/A
Luminaire Lumens: 13496.0 lumens
Efficiency: N/A
Efficacy: 107.2 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

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				10
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18083	18083	18083
5°	18042	17812	17995
10°	17805	18053	18106
15°	17481	17563	16806
20°	17087	16452	16072
25°	16670	15740	16173
30°	16037	15166	16351
35°	15586	14621	16062
40°	15100	14212	16161
45°	14578	13686	15870
50°	13944	13133	15748
55°	13014	12541	15740
60°	12299	11730	15068
65°	10873	10762	14587
70°	8872	9507	13081
75°	6331	7985	11941
80°	3552	6452	10720
85°	1318	4872	9444

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 15870 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	430.6	3.2
10°-20°	1226.2	9.1
20°-30°	1824.4	13.5
30°-40°	2192.9	16.2
40°-50°	2308.2	17.1
50°-60°	2141.7	15.9
60°-70°	1693.4	12.5
70°-80°	1034.4	7.7
80°-90°	450.7	3.3
90°-100°	140.3	1.0
100°-110°	31.5	0.2
110°-120°	12.7	0.1
120°-130°	7.1	0.1
130°-140°	1.9	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°	3481.1	25.8
0°-40°	5674.1	42.0
0°-60°	10124.0	75.0
0°-90°	13302.5	98.6
90°-120°	184.5	1.4
90°-150°	193.5	1.4
90°-180°	194.0	1.4
0°-180°	13496.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4480	4480	4480	4480	4480	
5°	4469	4460	4475	4526	4538	424
15°	4230	4392	4435	4288	4291	1192
25°	3816	4059	3874	3990	4055	1752
35°	3255	3346	3396	3704	3830	2034
45°	2660	2672	2892	3350	3475	2051
55°	1959	1991	2307	2812	3035	1760
65°	1240	1280	1625	2151	2346	1228
75°	469	622	906	1393	1480	512
85°	42	146	353	685	787	65
90°	1	44	185	434	512	2
95°	1	11	81	238	291	1
105°	1	6	16	46	66	1
115°	1	4	13	21	22	1
125°	1	2	6	14	19	1
135°	2	2	2	5	6	1
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-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4479.9	4479.9	4479.9	4479.9	4479.9
2.5°	4485.4	4473.5	4448.9	4472.6	4479.0
5°	4469.0	4459.9	4475.4	4525.6	4538.3
7.5°	4431.6	4466.2	4507.3	4598.6	4627.8
10°	4375.9	4441.6	4564.8	4642.4	4612.3
12.5°	4308.4	4419.7	4584.9	4433.4	4363.1
15°	4229.9	4392.3	4435.2	4288.3	4291.0
17.5°	4137.7	4369.5	4237.2	4233.5	4207.1
20°	4038.2	4292.9	4117.6	4110.3	4082.0
22.5°	3931.5	4191.6	4011.8	3997.2	4073.8
25°	3815.6	4059.2	3874.0	3989.9	4054.7
27.5°	3670.5	3885.8	3759.0	3923.3	4004.5
30°	3523.5	3707.0	3641.3	3870.3	4014.5
32.5°	3385.7	3519.9	3544.5	3850.2	3874.0
35°	3255.2	3345.6	3395.8	3704.2	3830.2
37.5°	3112.0	3136.6	3269.8	3643.1	3764.5
40°	2965.9	2950.4	3164.0	3542.7	3710.6
42.5°	2809.0	2803.5	3051.7	3492.5	3576.5
45°	2660.2	2672.1	2892.0	3350.1	3475.2
47.5°	2507.8	2523.3	2740.5	3194.1	3349.2
50°	2330.8	2350.8	2605.5	3055.4	3255.2
52.5°	2139.1	2177.5	2474.1	2924.0	3125.6
55°	1959.3	1991.3	2307.0	2811.7	3035.3
57.5°	1795.1	1814.2	2134.6	2670.3	2839.1
60°	1633.5	1638.1	1972.1	2513.3	2674.8
62.5°	1448.3	1456.5	1805.1	2328.0	2544.3
65°	1240.2	1279.5	1625.3	2151.0	2346.3
67.5°	1045.8	1114.3	1441.9	1988.5	2090.8
70°	837.8	953.7	1262.1	1797.8	1869.9
72.5°	647.0	783.0	1077.8	1584.3	1685.6
75°	469.1	621.5	906.2	1392.6	1480.2
77.5°	315.8	470.9	745.6	1180.9	1296.8
80°	188.9	344.0	602.3	984.7	1115.2
82.5°	96.7	230.9	467.2	825.9	942.7
85°	42.0	146.0	353.2	685.4	786.7
87.5°	11.9	83.0	260.1	553.9	639.7
90°	0.9	43.8	185.3	434.4	512.0
92.5°	0.9	21.0	130.5	328.5	387.9
95°	0.9	11.0	81.2	238.2	291.1
97.5°	0.9	6.4	49.3	168.8	213.5
100°	0.9	5.5	29.2	112.2	152.4
102.5°	0.9	6.4	20.1	71.2	99.5
105°	0.9	6.4	16.4	46.5	65.7
107.5°	1.8	6.4	14.6	34.7	45.6
110°	0.9	5.5	15.5	26.5	35.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.8	4.6	14.6	21.9	26.5
115°	0.9	3.7	12.8	21.0	21.9
117.5°	1.8	2.7	10.0	21.0	21.9
120°	1.8	1.8	8.2	20.1	22.8
122.5°	1.8	1.8	6.4	18.3	21.9
125°	0.9	1.8	5.5	13.7	19.2
127.5°	1.8	1.8	4.6	11.0	14.6
130°	1.8	1.8	3.7	8.2	11.0
132.5°	1.8	1.8	2.7	6.4	8.2
135°	1.8	1.8	1.8	4.6	6.4
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)