

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: P517280

Luminaire Tested: HVL12-1-LD4-3STD-35-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: P517280
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3STD-35-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2873.0 lumens
Efficiency: N/A
Efficacy: 117.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

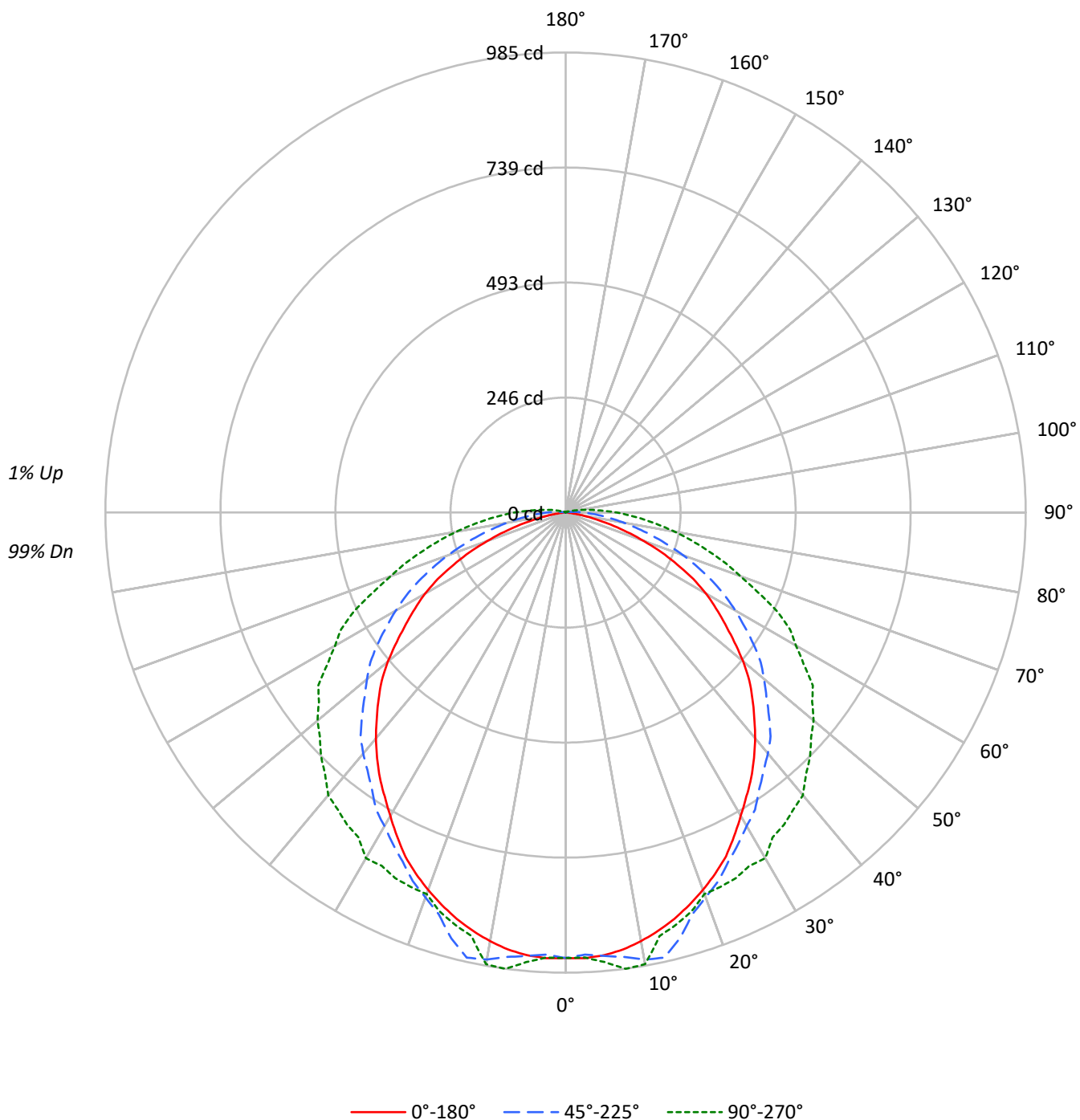
Input Watts (W): 24.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	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	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	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°	10266	10266	10266
5°	10131	10086	10289
10°	9891	10197	10425
15°	9605	9897	9744
20°	9284	9248	9385
25°	8950	8825	9511
30°	8505	8480	9689
35°	8154	8153	9595
40°	7783	7901	9737
45°	7389	7583	9653
50°	6932	7250	9681
55°	6322	6895	9793
60°	5808	6417	9512
65°	4953	5853	9372
70°	3849	5132	8593
75°	2561	4268	8079
80°	1281	3400	7564
85°	378	2514	7120

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 9793 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	91.7	3.2
10°-20°	261.0	9.1
20°-30°	388.4	13.5
30°-40°	466.8	16.2
40°-50°	491.4	17.1
50°-60°	455.9	15.9
60°-70°	360.5	12.5
70°-80°	220.2	7.7
80°-90°	95.9	3.3
90°-100°	29.9	1.0
100°-110°	6.7	0.2
110°-120°	2.7	0.1
120°-130°	1.5	0.1
130°-140°	0.4	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°	741.1	25.8
0°-40°	1207.9	42.0
0°-60°	2155.2	75.0
0°-90°	2831.8	98.6
90°-120°	39.3	1.4
90°-150°	41.2	1.4
90°-180°	41.0	1.4
0°-180°	2873.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	954	954	954	954	954	
5°	951	949	953	963	966	90
15°	900	935	944	913	914	254
25°	812	864	825	849	863	373
35°	693	712	723	788	815	433
45°	566	569	616	713	740	437
55°	417	424	491	599	646	375
65°	264	272	346	458	500	261
75°	100	132	193	296	315	109
85°	9	31	75	146	168	14
90°	0	9	39	92	109	0
95°	0	2	17	51	62	0
105°	0	1	4	10	14	0
115°	0	1	3	4	5	0
125°	0	0	1	3	4	0
135°	0	0	0	1	1	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°	953.7	953.7	953.7	953.7	953.7
2.5°	954.8	952.3	947.1	952.1	953.5
5°	951.3	949.4	952.7	963.4	966.1
7.5°	943.4	950.8	959.5	978.9	985.2
10°	931.5	945.5	971.7	988.3	981.8
12.5°	917.2	940.9	976.0	943.8	928.8
15°	900.4	935.0	944.2	912.9	913.5
17.5°	880.8	930.2	902.0	901.2	895.6
20°	859.7	913.9	876.6	875.0	869.0
22.5°	836.9	892.3	854.0	850.9	867.2
25°	812.2	864.1	824.7	849.4	863.1
27.5°	781.4	827.2	800.2	835.2	852.5
30°	750.1	789.1	775.1	823.9	854.6
32.5°	720.7	749.3	754.6	819.6	824.7
35°	693.0	712.2	722.9	788.5	815.4
37.5°	662.5	667.7	696.1	775.5	801.4
40°	631.4	628.1	673.5	754.2	789.9
42.5°	598.0	596.8	649.6	743.5	761.4
45°	566.3	568.8	615.6	713.2	739.8
47.5°	533.9	537.2	583.4	680.0	713.0
50°	496.2	500.4	554.6	650.4	693.0
52.5°	455.4	463.5	526.7	622.4	665.4
55°	417.1	423.9	491.1	598.6	646.1
57.5°	382.1	386.2	454.4	568.4	604.4
60°	347.7	348.7	419.8	535.0	569.4
62.5°	308.3	310.1	384.3	495.6	541.6
65°	264.0	272.4	346.0	457.9	499.5
67.5°	222.6	237.2	306.9	423.3	445.1
70°	178.3	203.0	268.7	382.7	398.1
72.5°	137.7	166.7	229.4	337.3	358.8
75°	99.9	132.3	192.9	296.5	315.1
77.5°	67.2	100.2	158.7	251.4	276.1
80°	40.2	73.2	128.2	209.6	237.4
82.5°	20.6	49.2	99.5	175.8	200.7
85°	8.9	31.1	75.2	145.9	167.5
87.5°	2.5	17.7	55.4	117.9	136.2
90°	0.2	9.3	39.4	92.5	109.0
92.5°	0.2	4.5	27.8	69.9	82.6
95°	0.2	2.3	17.3	50.7	62.0
97.5°	0.2	1.4	10.5	35.9	45.5
100°	0.2	1.2	6.2	23.9	32.4
102.5°	0.2	1.4	4.3	15.2	21.2
105°	0.2	1.4	3.5	9.9	14.0
107.5°	0.4	1.4	3.1	7.4	9.7
110°	0.2	1.2	3.3	5.6	7.6

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CATALOG NUMBER: HVL12-1-LD4-3STD-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.0	3.1	4.7	5.6
115°	0.2	0.8	2.7	4.5	4.7
117.5°	0.4	0.6	2.1	4.5	4.7
120°	0.4	0.4	1.7	4.3	4.9
122.5°	0.4	0.4	1.4	3.9	4.7
125°	0.2	0.4	1.2	2.9	4.1
127.5°	0.4	0.4	1.0	2.3	3.1
130°	0.4	0.4	0.8	1.7	2.3
132.5°	0.4	0.4	0.6	1.4	1.7
135°	0.4	0.4	0.4	1.0	1.4
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)