

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: P517719

Luminaire Tested: HVL12-8-LD4-3STD-50-UNV-C-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: P517719
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3STD-50-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 23608.0 lumens
Efficiency: N/A
Efficacy: 120.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

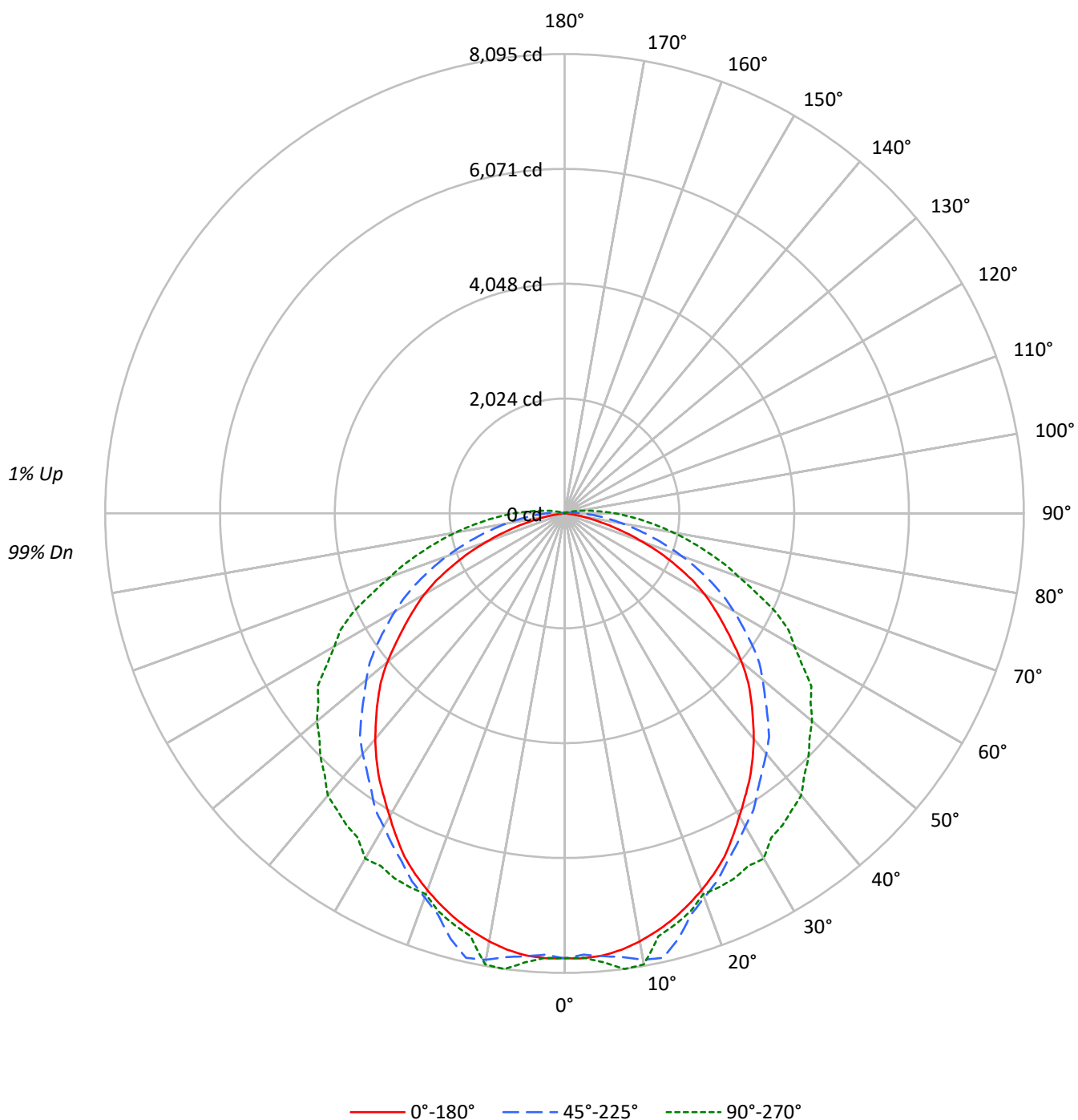
Input Watts (W): 196.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10544	10544	10544
5°	10539	10452	10568
10°	10420	10660	10708
15°	10250	10436	10009
20°	10038	9838	9639
25°	9813	9475	9770
30°	9462	9192	9952
35°	9218	8928	9855
40°	8956	8748	10002
45°	8674	8499	9914
50°	8327	8238	9944
55°	7808	7959	10060
60°	7422	7549	9770
65°	6612	7047	9626
70°	5453	6366	8826
75°	3958	5513	8298
80°	2289	4659	7770
85°	915	3791	7312

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 10060 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	753.2	3.2
10°-20°	2144.9	9.1
20°-30°	3191.3	13.5
30°-40°	3836.0	16.2
40°-50°	4037.6	17.1
50°-60°	3746.5	15.9
60°-70°	2962.2	12.5
70°-80°	1809.4	7.7
80°-90°	788.4	3.3
90°-100°	245.4	1.0
100°-110°	55.1	0.2
110°-120°	22.2	0.1
120°-130°	12.5	0.1
130°-140°	3.4	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°	6089.4	25.8
0°-40°	9925.4	42.0
0°-60°	17709.5	75.0
0°-90°	23269.5	98.6
90°-120°	322.7	1.4
90°-150°	338.6	1.4
90°-180°	339.0	1.4
0°-180°	23608.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7837	7837	7837	7837	7837	
5°	7817	7802	7829	7916	7939	741
15°	7399	7683	7758	7501	7506	2084
25°	6674	7101	6777	6979	7093	3064
35°	5694	5852	5940	6480	6700	3559
45°	4653	4674	5059	5860	6079	3587
55°	3427	3483	4036	4918	5310	3080
65°	2170	2238	2843	3763	4104	2149
75°	820	1087	1585	2436	2589	895
85°	73	255	618	1199	1376	114
90°	2	77	324	760	896	4
95°	2	19	142	417	509	1
105°	2	11	29	81	115	2
115°	2	6	22	37	38	3
125°	2	3	10	24	34	3
135°	3	3	3	8	11	2
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°	7836.6	7836.6	7836.6	7836.6	7836.6
2.5°	7846.2	7825.4	7782.3	7823.8	7835.0
5°	7817.4	7801.5	7828.6	7916.4	7938.7
7.5°	7752.0	7812.6	7884.5	8044.1	8095.2
10°	7654.6	7769.5	7985.0	8120.7	8068.0
12.5°	7536.5	7731.2	8020.2	7755.2	7632.2
15°	7399.2	7683.3	7758.3	7501.3	7506.1
17.5°	7237.9	7643.4	7411.9	7405.6	7359.3
20°	7063.9	7509.3	7202.8	7190.0	7140.6
22.5°	6877.2	7332.1	7017.6	6992.1	7126.2
25°	6674.4	7100.6	6776.6	6979.3	7092.7
27.5°	6420.6	6797.3	6575.4	6862.8	7004.9
30°	6163.6	6484.4	6369.5	6770.2	7022.4
32.5°	5922.5	6157.2	6200.3	6735.1	6776.6
35°	5694.2	5852.3	5940.1	6479.7	6700.0
37.5°	5443.6	5486.7	5719.8	6372.7	6585.0
40°	5188.2	5161.1	5534.6	6197.1	6490.8
42.5°	4913.6	4904.0	5338.3	6109.3	6256.2
45°	4653.4	4674.2	5058.9	5860.3	6079.0
47.5°	4386.8	4414.0	4793.9	5587.3	5858.7
50°	4077.1	4112.2	4557.6	5344.6	5694.2
52.5°	3741.9	3808.9	4327.8	5114.8	5467.6
55°	3427.4	3483.3	4035.6	4918.4	5309.5
57.5°	3140.1	3173.6	3733.9	4671.0	4966.3
60°	2857.5	2865.5	3449.8	4396.4	4679.0
62.5°	2533.4	2547.8	3157.6	4072.3	4450.7
65°	2169.5	2238.1	2843.1	3762.6	4104.3
67.5°	1829.4	1949.2	2522.3	3478.5	3657.3
70°	1465.5	1668.2	2207.8	3144.8	3271.0
72.5°	1131.8	1369.7	1885.3	2771.3	2948.5
75°	820.5	1087.1	1585.2	2436.1	2589.3
77.5°	552.3	823.7	1304.2	2065.7	2268.4
80°	330.4	601.8	1053.6	1722.5	1950.8
82.5°	169.2	403.9	817.3	1444.7	1649.0
85°	73.4	255.4	617.8	1198.9	1376.1
87.5°	20.8	145.3	455.0	969.0	1119.1
90°	1.6	76.6	324.1	759.9	895.6
92.5°	1.6	36.7	228.3	574.7	678.5
95°	1.6	19.2	142.1	416.7	509.2
97.5°	1.6	11.2	86.2	295.3	373.6
100°	1.6	9.6	51.1	196.4	266.6
102.5°	1.6	11.2	35.1	124.5	174.0
105°	1.6	11.2	28.7	81.4	114.9
107.5°	3.2	11.2	25.5	60.7	79.8
110°	1.6	9.6	27.1	46.3	62.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.2	8.0	25.5	38.3	46.3
115°	1.6	6.4	22.3	36.7	38.3
117.5°	3.2	4.8	17.6	36.7	38.3
120°	3.2	3.2	14.4	35.1	39.9
122.5°	3.2	3.2	11.2	31.9	38.3
125°	1.6	3.2	9.6	23.9	33.5
127.5°	3.2	3.2	8.0	19.2	25.5
130°	3.2	3.2	6.4	14.4	19.2
132.5°	3.2	3.2	4.8	11.2	14.4
135°	3.2	3.2	3.2	8.0	11.2
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)