

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: P517812

Luminaire Tested: HVL8-1-LD4-2STD-40-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: P517812
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2STD-40-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1761.9 lumens
Efficiency: N/A
Efficacy: 108.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

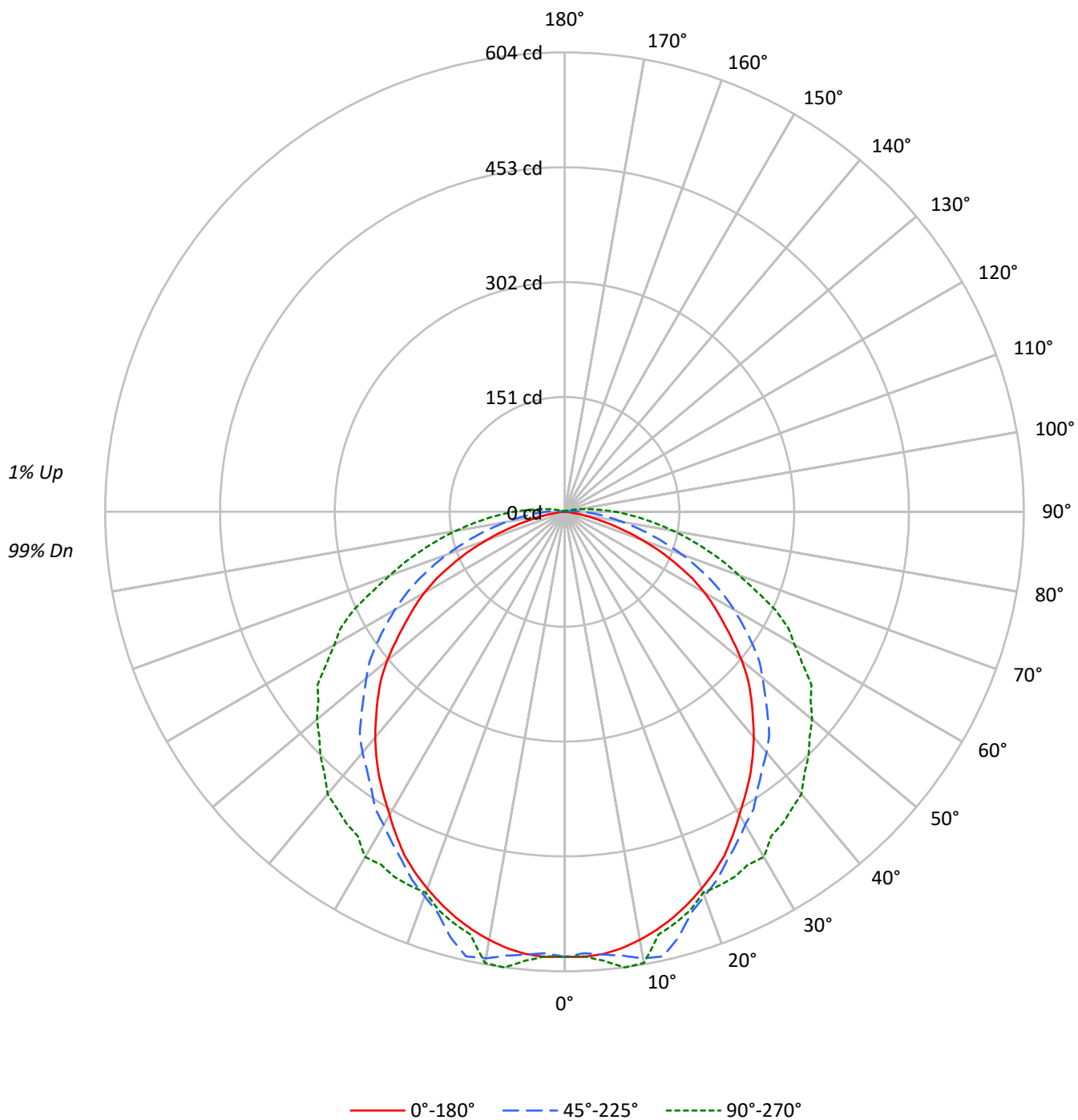
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	40	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°	9444	9444	9444
5°	9321	9232	9397
10°	9099	9289	9456
15°	8836	8972	8776
20°	8540	8342	8393
25°	8234	7922	8446
30°	7823	7574	8538
35°	7501	7243	8388
40°	7160	6981	8439
45°	6797	6660	8287
50°	6377	6324	8224
55°	5816	5967	8220
60°	5345	5505	7868
65°	4556	4968	7617
70°	3542	4299	6831
75°	2354	3515	6238
80°	1181	2736	5599
85°	351	1955	4931

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8287 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.2	3.2
10°-20°	160.1	9.1
20°-30°	238.2	13.5
30°-40°	286.3	16.2
40°-50°	301.3	17.1
50°-60°	279.6	15.9
60°-70°	221.1	12.5
70°-80°	135.0	7.7
80°-90°	58.8	3.3
90°-100°	18.3	1.0
100°-110°	4.1	0.2
110°-120°	1.7	0.1
120°-130°	0.9	0.1
130°-140°	0.2	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°	454.5	25.8
0°-40°	740.8	42.0
0°-60°	1321.8	75.0
0°-90°	1736.7	98.6
90°-120°	24.1	1.4
90°-150°	25.2	1.4
90°-180°	25.0	1.4
0°-180°	1761.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	585	585	585	585	585	
5°	584	582	584	591	592	55
15°	552	574	579	560	560	156
25°	498	530	506	521	529	229
35°	425	437	443	484	500	266
45°	347	349	378	437	454	268
55°	256	260	301	367	396	230
65°	162	167	212	281	306	160
75°	61	81	118	182	193	67
85°	6	19	46	90	103	8
90°	0	6	24	57	67	0
95°	0	1	11	31	38	0
105°	0	1	2	6	9	0
115°	0	0	2	3	3	0
125°	0	0	1	2	2	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°	584.9	584.9	584.9	584.9	584.9
2.5°	585.6	584.1	580.8	583.9	584.8
5°	583.5	582.3	584.3	590.8	592.5
7.5°	578.6	583.1	588.5	600.4	604.2
10°	571.3	579.9	596.0	606.1	602.2
12.5°	562.5	577.0	598.6	578.8	569.6
15°	552.2	573.5	579.1	559.9	560.2
17.5°	540.2	570.5	553.2	552.7	549.3
20°	527.2	560.5	537.6	536.6	532.9
22.5°	513.3	547.2	523.8	521.9	531.9
25°	498.1	530.0	505.8	520.9	529.4
27.5°	479.2	507.3	490.8	512.2	522.8
30°	460.0	484.0	475.4	505.3	524.1
32.5°	442.0	459.5	462.8	502.7	505.8
35°	425.0	436.8	443.3	483.6	500.1
37.5°	406.3	409.5	426.9	475.6	491.5
40°	387.2	385.2	413.1	462.5	484.4
42.5°	366.7	366.0	398.4	456.0	466.9
45°	347.3	348.9	377.6	437.4	453.7
47.5°	327.4	329.4	357.8	417.0	437.3
50°	304.3	306.9	340.2	398.9	425.0
52.5°	279.3	284.3	323.0	381.7	408.1
55°	255.8	260.0	301.2	367.1	396.3
57.5°	234.4	236.9	278.7	348.6	370.7
60°	213.3	213.9	257.5	328.1	349.2
62.5°	189.1	190.2	235.7	303.9	332.2
65°	161.9	167.0	212.2	280.8	306.3
67.5°	136.5	145.5	188.3	259.6	273.0
70°	109.4	124.5	164.8	234.7	244.1
72.5°	84.5	102.2	140.7	206.8	220.1
75°	61.2	81.1	118.3	181.8	193.3
77.5°	41.2	61.5	97.3	154.2	169.3
80°	24.7	44.9	78.6	128.6	145.6
82.5°	12.6	30.1	61.0	107.8	123.1
85°	5.5	19.1	46.1	89.5	102.7
87.5°	1.5	10.8	34.0	72.3	83.5
90°	0.1	5.7	24.2	56.7	66.8
92.5°	0.1	2.7	17.0	42.9	50.6
95°	0.1	1.4	10.6	31.1	38.0
97.5°	0.1	0.8	6.4	22.0	27.9
100°	0.1	0.7	3.8	14.7	19.9
102.5°	0.1	0.8	2.6	9.3	13.0
105°	0.1	0.8	2.1	6.1	8.6
107.5°	0.2	0.8	1.9	4.5	6.0
110°	0.1	0.7	2.0	3.5	4.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.6	1.9	2.9	3.5
115°	0.1	0.5	1.7	2.7	2.9
117.5°	0.2	0.4	1.3	2.7	2.9
120°	0.2	0.2	1.1	2.6	3.0
122.5°	0.2	0.2	0.8	2.4	2.9
125°	0.1	0.2	0.7	1.8	2.5
127.5°	0.2	0.2	0.6	1.4	1.9
130°	0.2	0.2	0.5	1.1	1.4
132.5°	0.2	0.2	0.4	0.8	1.1
135°	0.2	0.2	0.2	0.6	0.8
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)