

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: P517784

Luminaire Tested: HVL8-1-LD4-2HI-50-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: P517784
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2HI-50-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

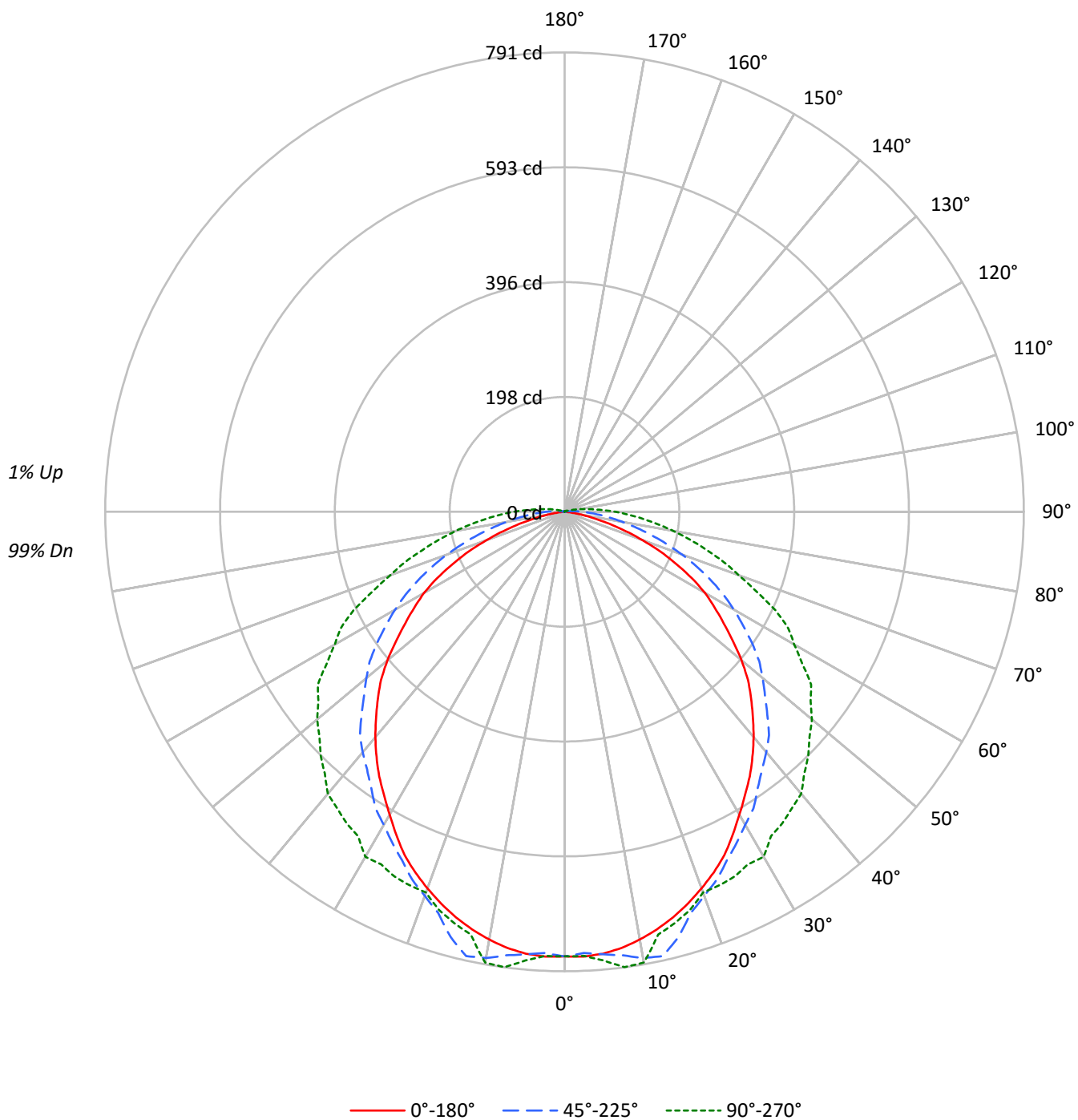
Lumens per Lamp: N/A
Luminaire Lumens: 2306.0 lumens
Efficiency: N/A
Efficacy: 107.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

Input Watts (W): 21.5
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
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°	12360	12360	12360
5°	12198	12082	12298
10°	11908	12156	12375
15°	11564	11740	11486
20°	11177	10918	10985
25°	10776	10367	11053
30°	10240	9913	11174
35°	9817	9480	10977
40°	9371	9135	11045
45°	8895	8714	10846
50°	8344	8276	10763
55°	7612	7810	10757
60°	6993	7205	10297
65°	5964	6501	9970
70°	4633	5627	8941
75°	3080	4599	8161
80°	1544	3582	7325
85°	459	2557	6453

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10846 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.6	3.2
10°-20°	209.5	9.1
20°-30°	311.7	13.5
30°-40°	374.7	16.2
40°-50°	394.4	17.1
50°-60°	365.9	15.9
60°-70°	289.3	12.5
70°-80°	176.8	7.7
80°-90°	77.0	3.3
90°-100°	24.0	1.0
100°-110°	5.4	0.2
110°-120°	2.2	0.1
120°-130°	1.2	0.1
130°-140°	0.3	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°	594.8	25.8
0°-40°	969.5	42.0
0°-60°	1729.8	75.0
0°-90°	2272.9	98.6
90°-120°	31.5	1.4
90°-150°	33.1	1.4
90°-180°	33.0	1.4
0°-180°	2306.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	766	766	766	766	766	
5°	764	762	765	773	775	72
15°	723	750	758	733	733	204
25°	652	694	662	682	693	299
35°	556	572	580	633	654	348
45°	454	457	494	572	594	350
55°	335	340	394	480	519	301
65°	212	219	278	368	401	210
75°	80	106	155	238	253	87
85°	7	25	60	117	134	11
90°	0	8	32	74	88	0
95°	0	2	14	41	50	0
105°	0	1	3	8	11	0
115°	0	1	2	4	4	0
125°	0	0	1	2	3	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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CATALOG NUMBER: HVL8-1-LD4-2HI-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	765.5	765.5	765.5	765.5	765.5
2.5°	766.4	764.4	760.2	764.2	765.3
5°	763.6	762.0	764.7	773.3	775.4
7.5°	757.2	763.1	770.1	785.7	790.7
10°	747.7	758.9	780.0	793.2	788.1
12.5°	736.2	755.2	783.4	757.5	745.5
15°	722.7	750.5	757.8	732.7	733.2
17.5°	707.0	746.6	724.0	723.4	718.8
20°	690.0	733.5	703.6	702.3	697.5
22.5°	671.8	716.2	685.5	683.0	696.1
25°	651.9	693.6	661.9	681.7	692.8
27.5°	627.2	664.0	642.3	670.3	684.2
30°	602.1	633.4	622.2	661.3	685.9
32.5°	578.5	601.4	605.6	657.9	661.9
35°	556.2	571.6	580.2	632.9	654.4
37.5°	531.7	535.9	558.7	622.5	643.2
40°	506.8	504.1	540.6	605.3	634.0
42.5°	480.0	479.0	521.4	596.7	611.1
45°	454.5	456.6	494.1	572.4	593.8
47.5°	428.5	431.1	468.3	545.8	572.3
50°	398.2	401.7	445.2	522.1	556.2
52.5°	365.5	372.1	422.7	499.6	534.1
55°	334.8	340.2	394.2	480.4	518.6
57.5°	306.7	310.0	364.7	456.3	485.1
60°	279.1	279.9	337.0	429.4	457.0
62.5°	247.5	248.9	308.4	397.8	434.7
65°	211.9	218.6	277.7	367.5	400.9
67.5°	178.7	190.4	246.4	339.8	357.2
70°	143.1	162.9	215.7	307.2	319.5
72.5°	110.6	133.8	184.2	270.7	288.0
75°	80.1	106.2	154.8	238.0	252.9
77.5°	54.0	80.5	127.4	201.8	221.6
80°	32.3	58.8	102.9	168.2	190.5
82.5°	16.5	39.5	79.8	141.1	161.1
85°	7.2	24.9	60.3	117.1	134.4
87.5°	2.0	14.2	44.4	94.7	109.3
90°	0.2	7.5	31.7	74.2	87.5
92.5°	0.2	3.6	22.3	56.1	66.3
95°	0.2	1.9	13.9	40.7	49.7
97.5°	0.2	1.1	8.4	28.8	36.5
100°	0.2	0.9	5.0	19.2	26.0
102.5°	0.2	1.1	3.4	12.2	17.0
105°	0.2	1.1	2.8	8.0	11.2
107.5°	0.3	1.1	2.5	5.9	7.8
110°	0.2	0.9	2.7	4.5	6.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.5	3.7	4.5
115°	0.2	0.6	2.2	3.6	3.7
117.5°	0.3	0.5	1.7	3.6	3.7
120°	0.3	0.3	1.4	3.4	3.9
122.5°	0.3	0.3	1.1	3.1	3.7
125°	0.2	0.3	0.9	2.3	3.3
127.5°	0.3	0.3	0.8	1.9	2.5
130°	0.3	0.3	0.6	1.4	1.9
132.5°	0.3	0.3	0.5	1.1	1.4
135°	0.3	0.3	0.3	0.8	1.1
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)