

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: P517778

Luminaire Tested: HVL8-1-LD4-2HI-35-UNV-O-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: P517778
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2HI-35-UNV-O-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2033.0 lumens
Efficiency: N/A
Efficacy: 94.6 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

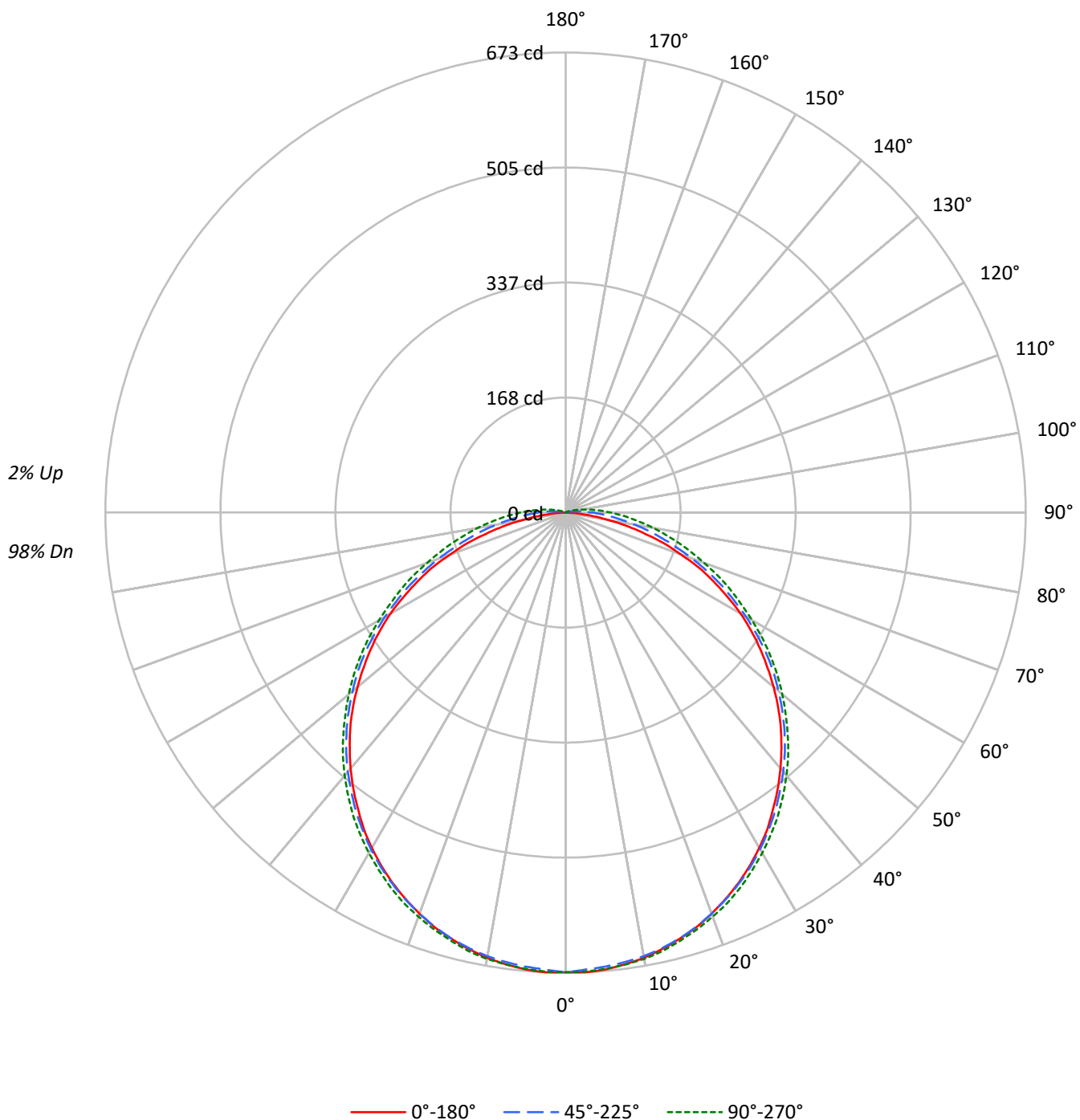
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		98
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		81
2	98	89	82	76	95	87	80	75	83	77	73		79	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	52		62	56	51		47
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		41
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10856	10856	10856
5°	10719	10534	10625
10°	10532	10269	10411
15°	10327	9989	10156
20°	10116	9689	9908
25°	9887	9385	9656
30°	9634	9066	9369
35°	9344	8725	9085
40°	9042	8370	8754
45°	8717	7989	8397
50°	8328	7560	8012
55°	7903	7097	7588
60°	7412	6521	7093
65°	6723	5885	6603
70°	5818	5157	6033
75°	4649	4370	5515
80°	3121	3596	5041
85°	1333	2816	4590

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8717 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.6	3.1
10°-20°	182.5	9.0
20°-30°	276.9	13.6
30°-40°	334.9	16.5
40°-50°	349.4	17.2
50°-60°	319.5	15.7
60°-70°	249.0	12.2
70°-80°	155.8	7.7
80°-90°	70.8	3.5
90°-100°	23.7	1.2
100°-110°	6.0	0.3
110°-120°	0.9	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	523.1	25.7
0°-40°	857.9	42.2
0°-60°	1526.8	75.1
0°-90°	2002.4	98.5
90°-120°	30.6	1.5
90°-150°	30.6	1.5
90°-180°	31.0	1.5
0°-180°	2033.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	672	672	672	672	672	
5°	671	670	667	670	670	64
15°	645	647	645	648	648	182
25°	598	598	599	604	605	276
35°	529	532	534	539	542	331
45°	445	449	453	458	460	343
55°	348	352	358	364	366	311
65°	239	243	251	261	266	236
75°	121	128	147	165	171	129
85°	21	39	66	88	96	26
90°	0	14	39	59	66	1
95°	0	4	20	37	42	0
105°	0	0	3	10	13	0
115°	0	0	1	2	2	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	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-35-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	672.4	672.4	672.4	672.4	672.4
2.5°	673.2	672.2	669.2	672.2	672.1
5°	671.0	669.7	666.7	669.9	669.9
7.5°	666.5	666.1	663.4	667.0	667.0
10°	661.3	661.1	658.9	662.9	663.0
12.5°	654.0	654.6	652.6	656.4	656.9
15°	645.4	646.6	644.8	648.5	648.3
17.5°	636.1	636.7	635.5	639.6	639.4
20°	624.5	625.3	624.4	628.6	629.1
22.5°	611.7	612.8	612.6	617.1	618.3
25°	598.1	598.5	599.2	604.2	605.2
27.5°	583.0	583.8	584.9	589.5	590.4
30°	566.5	567.8	569.0	573.8	575.1
32.5°	549.1	550.3	551.9	558.1	558.7
35°	529.4	531.8	534.0	539.4	541.6
37.5°	509.8	512.8	514.8	520.5	522.3
40°	489.0	492.0	495.3	501.4	502.5
42.5°	467.3	470.8	474.7	480.1	482.0
45°	445.4	449.4	453.0	457.5	459.7
47.5°	421.8	425.8	430.2	435.3	436.7
50°	397.4	402.0	406.7	411.5	414.0
52.5°	372.3	377.9	383.3	388.3	390.7
55°	347.6	351.7	358.2	363.5	365.8
57.5°	321.9	325.4	331.3	339.8	341.1
60°	295.8	298.9	305.0	311.9	314.8
62.5°	266.9	271.2	277.5	286.4	289.0
65°	238.9	243.0	251.4	261.4	265.5
67.5°	211.8	213.2	224.0	234.4	241.1
70°	179.7	185.1	197.7	210.5	215.6
72.5°	152.2	157.6	171.3	186.4	192.7
75°	120.9	128.4	147.1	164.7	170.9
77.5°	93.5	101.8	124.9	142.7	149.8
80°	65.3	78.1	103.3	123.3	131.1
82.5°	41.1	56.9	83.9	104.8	111.6
85°	20.9	38.7	66.4	87.8	95.6
87.5°	5.5	25.0	51.7	72.1	80.0
90°	0.2	14.4	39.2	58.8	65.9
92.5°	0.2	8.1	29.2	46.8	54.1
95°	0.2	3.8	20.3	36.8	42.5
97.5°	0.2	1.6	13.9	27.7	33.4
100°	0.2	0.8	8.9	20.1	25.0
102.5°	0.3	0.5	5.5	14.4	18.4
105°	0.3	0.5	3.3	9.8	13.2
107.5°	0.3	0.5	1.9	6.7	9.0
110°	0.5	0.5	1.1	4.1	6.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	0.5	0.6	2.7	4.0
115°	0.5	0.5	0.6	1.7	2.5
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)