

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: P517776

Luminaire Tested: HVL8-1-LD4-2HI-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: P517776
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-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

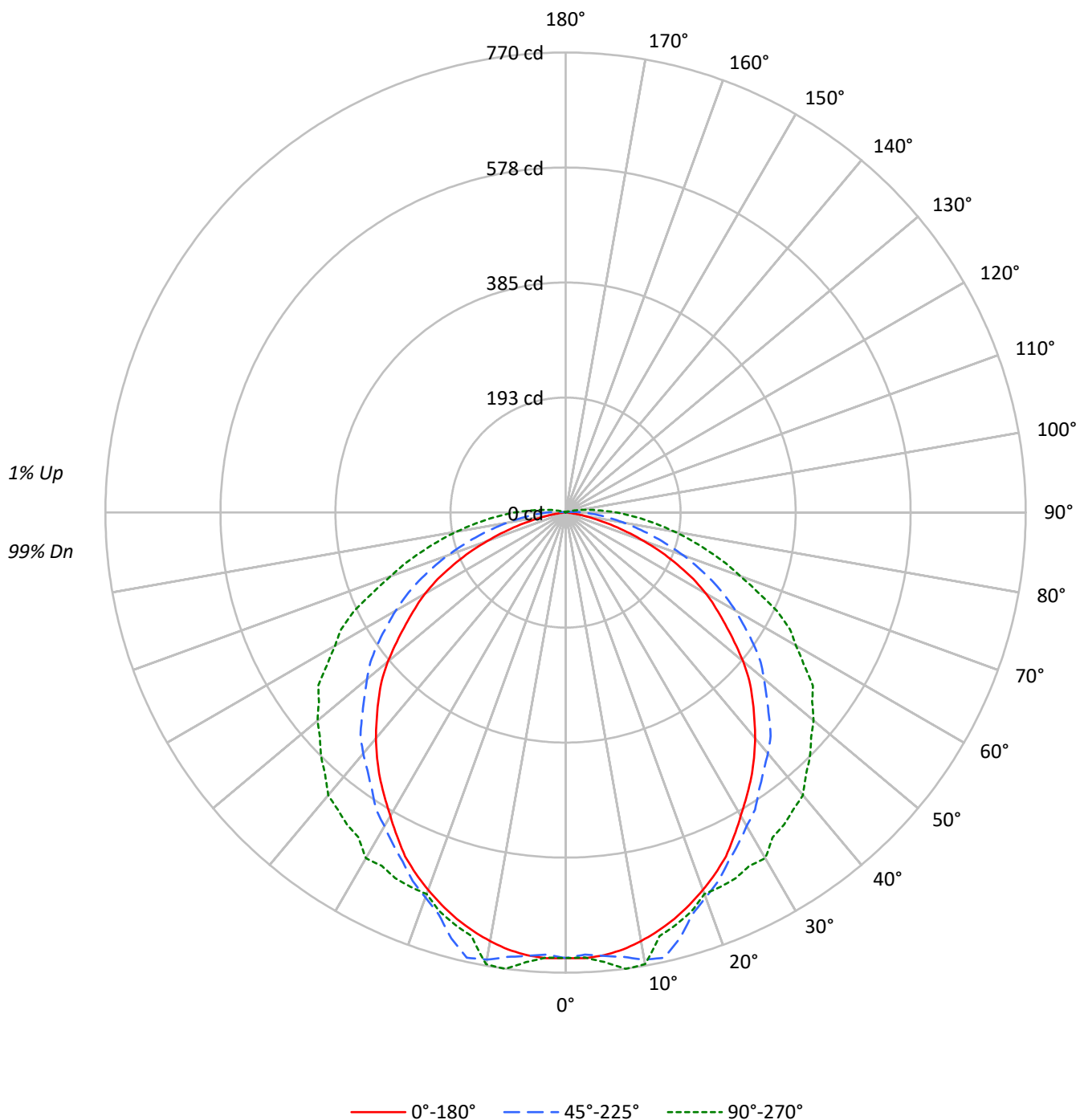
Lumens per Lamp: N/A
Luminaire Lumens: 2246.0 lumens
Efficiency: N/A
Efficacy: 104.5 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

Input Watts (W): 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°	12037	12037	12037
5°	11880	11768	11979
10°	11598	11840	12053
15°	11263	11435	11187
20°	10886	10634	10698
25°	10497	10098	10766
30°	9973	9655	10884
35°	9561	9233	10692
40°	9127	8897	10758
45°	8664	8488	10563
50°	8129	8061	10483
55°	7414	7606	10477
60°	6813	7017	10029
65°	5809	6332	9711
70°	4514	5478	8708
75°	3004	4480	7948
80°	1501	3488	7137
85°	446	2494	6285

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 10563 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.7	3.2
10°-20°	204.1	9.1
20°-30°	303.6	13.5
30°-40°	365.0	16.2
40°-50°	384.1	17.1
50°-60°	356.4	15.9
60°-70°	281.8	12.5
70°-80°	172.1	7.7
80°-90°	75.0	3.3
90°-100°	23.4	1.0
100°-110°	5.2	0.2
110°-120°	2.1	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°	579.3	25.8
0°-40°	944.3	42.0
0°-60°	1684.8	75.0
0°-90°	2213.8	98.6
90°-120°	30.7	1.4
90°-150°	32.2	1.4
90°-180°	32.0	1.4
0°-180°	2246.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	746	746	746	746	746	
5°	744	742	745	753	755	70
15°	704	731	738	714	714	198
25°	635	676	645	664	675	292
35°	542	557	565	616	637	339
45°	443	445	481	558	578	341
55°	326	331	384	468	505	293
65°	206	213	270	358	390	204
75°	78	103	151	232	246	85
85°	7	24	59	114	131	11
90°	0	7	31	72	85	0
95°	0	2	14	40	48	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-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	745.5	745.5	745.5	745.5	745.5
2.5°	746.5	744.5	740.4	744.3	745.4
5°	743.7	742.2	744.8	753.1	755.3
7.5°	737.5	743.3	750.1	765.3	770.2
10°	728.2	739.2	759.7	772.6	767.6
12.5°	717.0	735.5	763.0	737.8	726.1
15°	703.9	731.0	738.1	713.7	714.1
17.5°	688.6	727.2	705.2	704.5	700.1
20°	672.0	714.4	685.3	684.0	679.3
22.5°	654.3	697.6	667.6	665.2	678.0
25°	635.0	675.5	644.7	664.0	674.8
27.5°	610.8	646.7	625.6	652.9	666.4
30°	586.4	616.9	606.0	644.1	668.1
32.5°	563.5	585.8	589.9	640.8	644.7
35°	541.7	556.8	565.1	616.5	637.4
37.5°	517.9	522.0	544.2	606.3	626.5
40°	493.6	491.0	526.5	589.6	617.5
42.5°	467.5	466.6	507.9	581.2	595.2
45°	442.7	444.7	481.3	557.5	578.3
47.5°	417.3	419.9	456.1	531.6	557.4
50°	387.9	391.2	433.6	508.5	541.7
52.5°	356.0	362.4	411.7	486.6	520.2
55°	326.1	331.4	383.9	467.9	505.1
57.5°	298.7	301.9	355.2	444.4	472.5
60°	271.9	272.6	328.2	418.3	445.1
62.5°	241.0	242.4	300.4	387.4	423.4
65°	206.4	212.9	270.5	358.0	390.5
67.5°	174.0	185.4	240.0	330.9	347.9
70°	139.4	158.7	210.0	299.2	311.2
72.5°	107.7	130.3	179.4	263.7	280.5
75°	78.1	103.4	150.8	231.8	246.3
77.5°	52.5	78.4	124.1	196.5	215.8
80°	31.4	57.3	100.2	163.9	185.6
82.5°	16.1	38.4	77.8	137.4	156.9
85°	7.0	24.3	58.8	114.1	130.9
87.5°	2.0	13.8	43.3	92.2	106.5
90°	0.2	7.3	30.8	72.3	85.2
92.5°	0.2	3.5	21.7	54.7	64.5
95°	0.2	1.8	13.5	39.6	48.4
97.5°	0.2	1.1	8.2	28.1	35.5
100°	0.2	0.9	4.9	18.7	25.4
102.5°	0.2	1.1	3.3	11.8	16.6
105°	0.2	1.1	2.7	7.7	10.9
107.5°	0.3	1.1	2.4	5.8	7.6
110°	0.2	0.9	2.6	4.4	5.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.4	3.6	4.4
115°	0.2	0.6	2.1	3.5	3.6
117.5°	0.3	0.5	1.7	3.5	3.6
120°	0.3	0.3	1.4	3.3	3.8
122.5°	0.3	0.3	1.1	3.0	3.6
125°	0.2	0.3	0.9	2.3	3.2
127.5°	0.3	0.3	0.8	1.8	2.4
130°	0.3	0.3	0.6	1.4	1.8
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)