

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: P517904

Luminaire Tested: HVL8-2-LD4-1STD-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: P517904
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1STD-35-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1837.9 lumens
Efficiency: N/A
Efficacy: 112.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

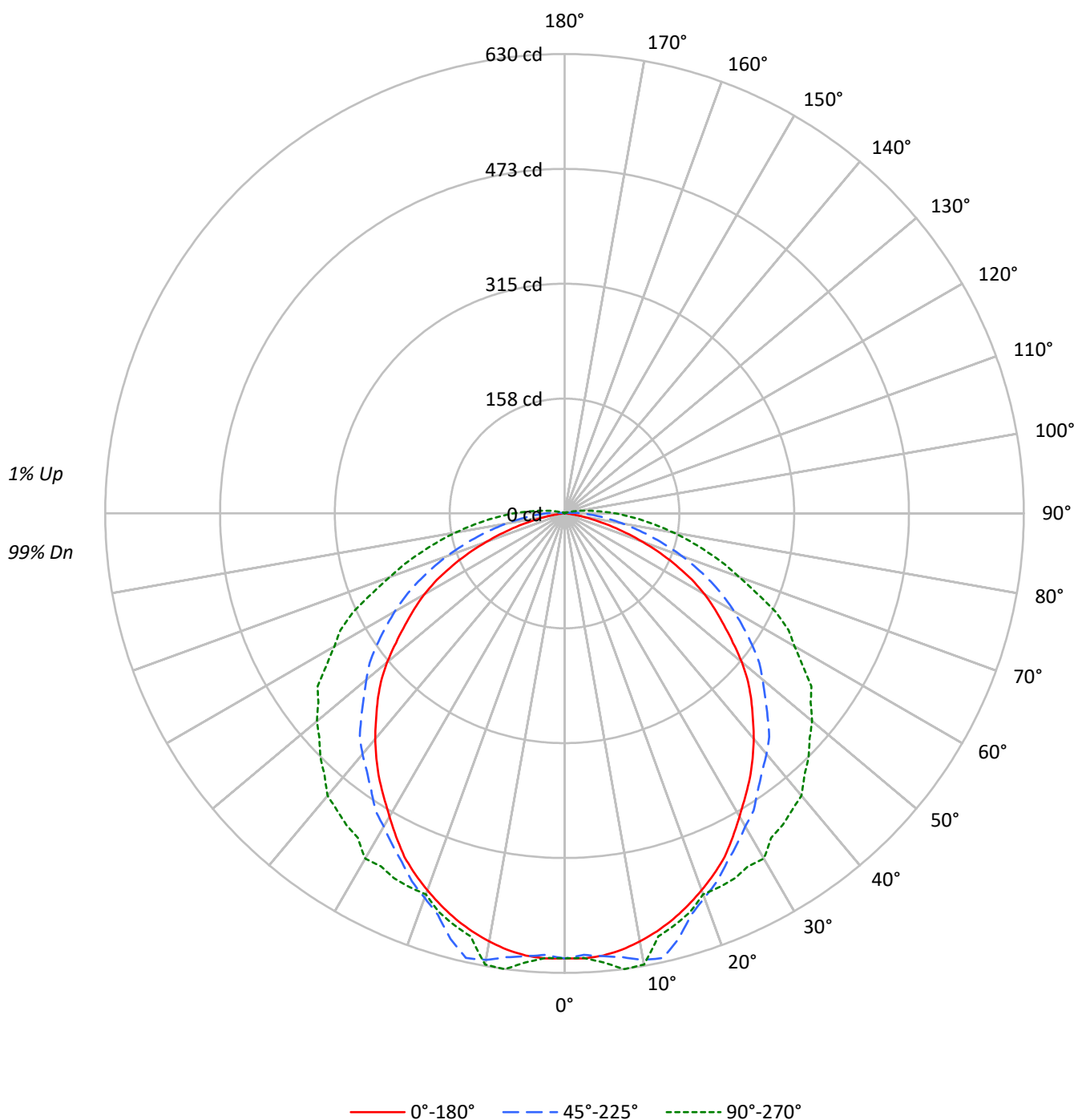
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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	40	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°	4925	4925	4925
5°	4896	4839	4902
10°	4814	4893	4931
15°	4710	4748	4578
20°	4586	4437	4377
25°	4455	4234	4405
30°	4268	4069	4453
35°	4128	3912	4375
40°	3978	3791	4402
45°	3818	3639	4323
50°	3626	3479	4289
55°	3356	3308	4287
60°	3139	3079	4104
65°	2737	2809	3973
70°	2191	2462	3564
75°	1520	2048	3253
80°	811	1631	2920
85°	270	1206	2571

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4323 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.6	3.2
10°-20°	167.0	9.1
20°-30°	248.5	13.5
30°-40°	298.7	16.2
40°-50°	314.3	17.1
50°-60°	291.7	15.9
60°-70°	230.6	12.5
70°-80°	140.9	7.7
80°-90°	61.4	3.3
90°-100°	19.1	1.0
100°-110°	4.3	0.2
110°-120°	1.7	0.1
120°-130°	1.0	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°	474.1	25.8
0°-40°	772.7	42.0
0°-60°	1378.8	75.0
0°-90°	1811.6	98.6
90°-120°	25.1	1.4
90°-150°	26.3	1.4
90°-180°	26.0	1.4
0°-180°	1837.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	610	610	610	610	610	
5°	609	607	610	616	618	58
15°	576	598	604	584	584	162
25°	520	553	528	543	552	239
35°	443	456	462	504	522	277
45°	362	364	394	456	473	279
55°	267	271	314	383	413	240
65°	169	174	221	293	320	167
75°	64	85	123	190	202	70
85°	6	20	48	93	107	9
90°	0	6	25	59	70	0
95°	0	2	11	32	40	0
105°	0	1	2	6	9	0
115°	0	0	2	3	3	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	610.1	610.1	610.1	610.1	610.1
2.5°	610.9	609.2	605.9	609.1	610.0
5°	608.6	607.4	609.5	616.3	618.1
7.5°	603.5	608.3	613.8	626.3	630.3
10°	595.9	604.9	621.7	632.2	628.1
12.5°	586.8	601.9	624.4	603.8	594.2
15°	576.1	598.2	604.0	584.0	584.4
17.5°	563.5	595.1	577.1	576.6	573.0
20°	550.0	584.6	560.8	559.8	555.9
22.5°	535.4	570.8	546.4	544.4	554.8
25°	519.6	552.8	527.6	543.4	552.2
27.5°	499.9	529.2	511.9	534.3	545.4
30°	479.9	504.8	495.9	527.1	546.7
32.5°	461.1	479.4	482.7	524.4	527.6
35°	443.3	455.6	462.5	504.5	521.6
37.5°	423.8	427.2	445.3	496.1	512.7
40°	403.9	401.8	430.9	482.5	505.3
42.5°	382.5	381.8	415.6	475.6	487.1
45°	362.3	363.9	393.9	456.3	473.3
47.5°	341.5	343.6	373.2	435.0	456.1
50°	317.4	320.2	354.8	416.1	443.3
52.5°	291.3	296.5	336.9	398.2	425.7
55°	266.8	271.2	314.2	382.9	413.4
57.5°	244.5	247.1	290.7	363.7	386.7
60°	222.5	223.1	268.6	342.3	364.3
62.5°	197.2	198.4	245.8	317.1	346.5
65°	168.9	174.2	221.4	292.9	319.5
67.5°	142.4	151.8	196.4	270.8	284.7
70°	114.1	129.9	171.9	244.8	254.7
72.5°	88.1	106.6	146.8	215.8	229.6
75°	63.9	84.6	123.4	189.7	201.6
77.5°	43.0	64.1	101.5	160.8	176.6
80°	25.7	46.9	82.0	134.1	151.9
82.5°	13.2	31.4	63.6	112.5	128.4
85°	5.7	19.9	48.1	93.3	107.1
87.5°	1.6	11.3	35.4	75.4	87.1
90°	0.1	6.0	25.2	59.2	69.7
92.5°	0.1	2.9	17.8	44.7	52.8
95°	0.1	1.5	11.1	32.4	39.6
97.5°	0.1	0.9	6.7	23.0	29.1
100°	0.1	0.7	4.0	15.3	20.8
102.5°	0.1	0.9	2.7	9.7	13.5
105°	0.1	0.9	2.2	6.3	8.9
107.5°	0.2	0.9	2.0	4.7	6.2
110°	0.1	0.7	2.1	3.6	4.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.6	2.0	3.0	3.6
115°	0.1	0.5	1.7	2.9	3.0
117.5°	0.2	0.4	1.4	2.9	3.0
120°	0.2	0.2	1.1	2.7	3.1
122.5°	0.2	0.2	0.9	2.5	3.0
125°	0.1	0.2	0.7	1.9	2.6
127.5°	0.2	0.2	0.6	1.5	2.0
130°	0.2	0.2	0.5	1.1	1.5
132.5°	0.2	0.2	0.4	0.9	1.1
135°	0.2	0.2	0.2	0.6	0.9
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)