

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: P517935

Luminaire Tested: HVL8-2-LD4-2LO-35-UNV-C-EDD-90

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: P517935
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2LO-35-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2267.0 lumens
Efficiency: N/A
Efficacy: 98.1 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

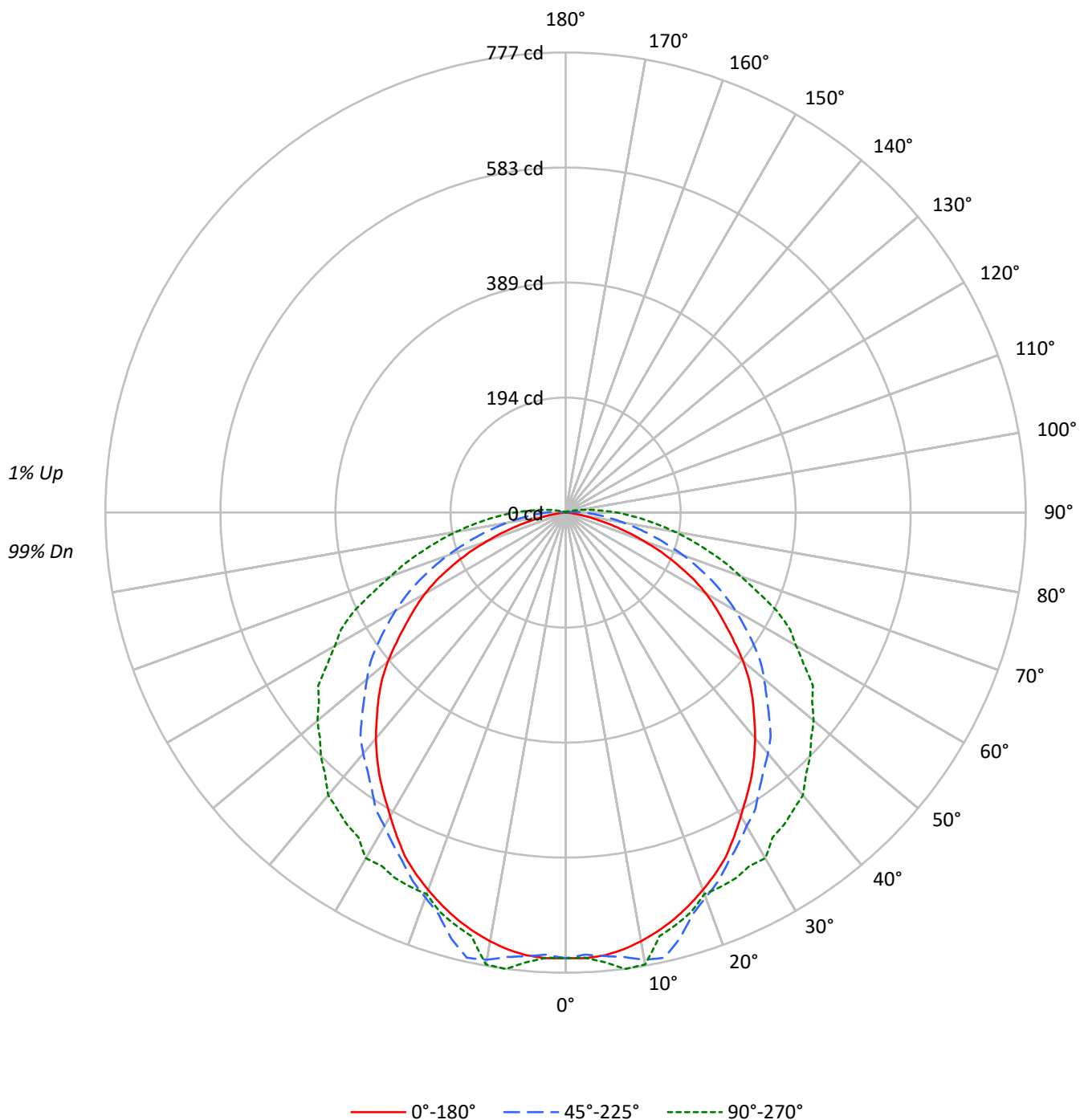
Input Watts (W): 23.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	6075	6075	6075
5°	6039	5969	6045
10°	5938	6035	6082
15°	5808	5857	5646
20°	5656	5473	5399
25°	5495	5222	5433
30°	5264	5018	5493
35°	5092	4825	5396
40°	4907	4676	5429
45°	4710	4488	5331
50°	4473	4291	5291
55°	4139	4080	5288
60°	3872	3798	5062
65°	3376	3464	4900
70°	2702	3037	4395
75°	1875	2525	4011
80°	1001	2013	3601
85°	337	1487	3172

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 5331 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.3	3.2
10°-20°	206.0	9.1
20°-30°	306.5	13.5
30°-40°	368.4	16.2
40°-50°	387.7	17.1
50°-60°	359.8	15.9
60°-70°	284.5	12.5
70°-80°	173.7	7.7
80°-90°	75.7	3.3
90°-100°	23.6	1.0
100°-110°	5.3	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°	584.7	25.8
0°-40°	953.1	42.0
0°-60°	1700.6	75.0
0°-90°	2234.5	98.6
90°-120°	31.0	1.4
90°-150°	32.5	1.4
90°-180°	33.0	1.5
0°-180°	2267.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	752	752	752	752	752	
5°	751	749	752	760	762	71
15°	710	738	745	720	721	200
25°	641	682	651	670	681	294
35°	547	562	570	622	643	342
45°	447	449	486	563	584	344
55°	329	334	388	472	510	296
65°	208	215	273	361	394	206
75°	79	104	152	234	249	86
85°	7	24	59	115	132	11
90°	0	7	31	73	86	0
95°	0	2	14	40	49	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: HVL8-2-LD4-2LO-35-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	752.5	752.5	752.5	752.5	752.5
2.5°	753.4	751.4	747.3	751.3	752.4
5°	750.7	749.1	751.8	760.2	762.3
7.5°	744.4	750.2	757.1	772.4	777.4
10°	735.0	746.1	766.8	779.8	774.7
12.5°	723.7	742.4	770.1	744.7	732.9
15°	710.5	737.8	745.0	720.3	720.8
17.5°	695.0	734.0	711.7	711.1	706.7
20°	678.3	721.1	691.7	690.4	685.7
22.5°	660.4	704.1	673.9	671.4	684.3
25°	640.9	681.9	650.7	670.2	681.1
27.5°	616.5	652.7	631.4	659.0	672.7
30°	591.9	622.7	611.6	650.1	674.3
32.5°	568.7	591.3	595.4	646.7	650.7
35°	546.8	562.0	570.4	622.2	643.4
37.5°	522.7	526.9	549.3	612.0	632.3
40°	498.2	495.6	531.5	595.1	623.3
42.5°	471.8	470.9	512.6	586.7	600.8
45°	446.9	448.8	485.8	562.7	583.7
47.5°	421.3	423.9	460.3	536.5	562.6
50°	391.5	394.9	437.7	513.2	546.8
52.5°	359.3	365.8	415.6	491.2	525.0
55°	329.1	334.5	387.5	472.3	509.9
57.5°	301.5	304.7	358.6	448.5	476.9
60°	274.4	275.2	331.3	422.2	449.3
62.5°	243.3	244.7	303.2	391.1	427.4
65°	208.3	214.9	273.0	361.3	394.1
67.5°	175.7	187.2	242.2	334.0	351.2
70°	140.7	160.2	212.0	302.0	314.1
72.5°	108.7	131.5	181.0	266.1	283.1
75°	78.8	104.4	152.2	233.9	248.6
77.5°	53.0	79.1	125.2	198.4	217.8
80°	31.7	57.8	101.2	165.4	187.3
82.5°	16.2	38.8	78.5	138.7	158.4
85°	7.1	24.5	59.3	115.1	132.1
87.5°	2.0	13.9	43.7	93.0	107.5
90°	0.2	7.4	31.1	73.0	86.0
92.5°	0.2	3.5	21.9	55.2	65.1
95°	0.2	1.8	13.6	40.0	48.9
97.5°	0.2	1.1	8.3	28.4	35.9
100°	0.2	0.9	4.9	18.9	25.6
102.5°	0.2	1.1	3.4	12.0	16.7
105°	0.2	1.1	2.8	7.8	11.0
107.5°	0.3	1.1	2.5	5.8	7.7
110°	0.2	0.9	2.6	4.4	6.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.5	3.7	4.4
115°	0.2	0.6	2.1	3.5	3.7
117.5°	0.3	0.5	1.7	3.5	3.7
120°	0.3	0.3	1.4	3.4	3.8
122.5°	0.3	0.3	1.1	3.1	3.7
125°	0.2	0.3	0.9	2.3	3.2
127.5°	0.3	0.3	0.8	1.8	2.5
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)