

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: P517867

Luminaire Tested: HVL8-2-LD4-1HI-30-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: P517867
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1HI-30-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1953.0 lumens
Efficiency: N/A
Efficacy: 90.8 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

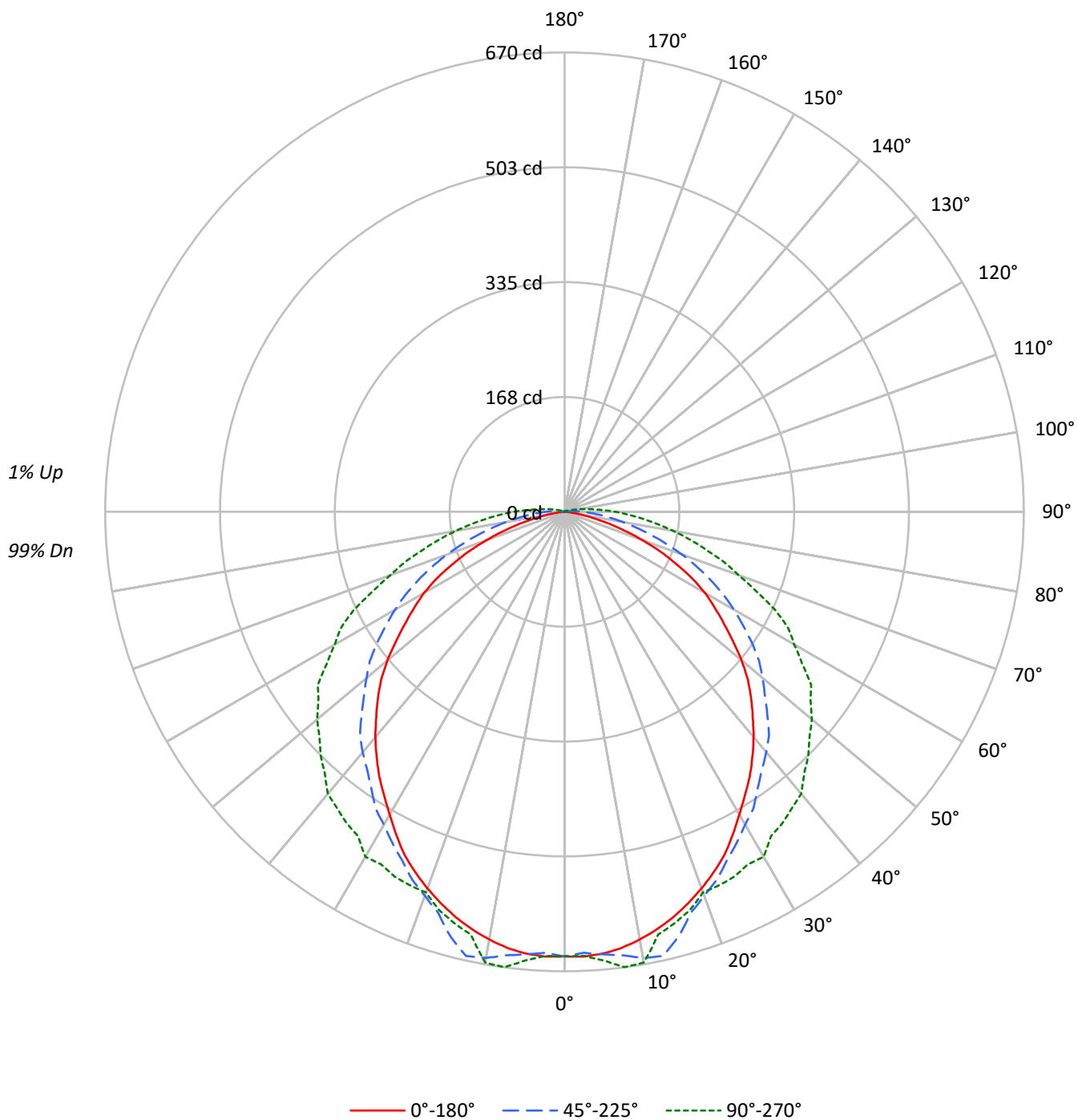
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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	39	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°	5234	5234	5234
5°	5203	5142	5208
10°	5115	5199	5240
15°	5004	5045	4864
20°	4873	4715	4651
25°	4734	4499	4680
30°	4535	4323	4732
35°	4387	4157	4649
40°	4227	4029	4678
45°	4057	3866	4593
50°	3853	3696	4558
55°	3566	3516	4555
60°	3335	3272	4361
65°	2909	2984	4221
70°	2328	2616	3786
75°	1615	2175	3456
80°	862	1735	3103
85°	289	1281	2732

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4593 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.3	3.2
10°-20°	177.4	9.1
20°-30°	264.0	13.5
30°-40°	317.3	16.2
40°-50°	334.0	17.1
50°-60°	309.9	15.9
60°-70°	245.1	12.5
70°-80°	149.7	7.7
80°-90°	65.2	3.3
90°-100°	20.3	1.0
100°-110°	4.5	0.2
110°-120°	1.8	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°	503.8	25.8
0°-40°	821.1	42.0
0°-60°	1465.0	75.0
0°-90°	1925.0	98.6
90°-120°	26.7	1.4
90°-150°	28.0	1.4
90°-180°	28.0	1.4
0°-180°	1953.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	648	648	648	648	648	
5°	647	645	648	655	657	61
15°	612	636	642	621	621	172
25°	552	587	561	577	587	253
35°	471	484	491	536	554	294
45°	385	387	418	485	503	297
55°	284	288	334	407	439	255
65°	180	185	235	311	340	178
75°	68	90	131	202	214	74
85°	6	21	51	99	114	9
90°	0	6	27	63	74	0
95°	0	2	12	34	42	0
105°	0	1	2	7	10	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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CATALOG NUMBER: HVL8-2-LD4-1HI-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	648.3	648.3	648.3	648.3	648.3
2.5°	649.1	647.4	643.8	647.2	648.2
5°	646.7	645.4	647.6	654.9	656.7
7.5°	641.3	646.3	652.3	665.5	669.7
10°	633.2	642.7	660.6	671.8	667.4
12.5°	623.5	639.6	663.5	641.6	631.4
15°	612.1	635.6	641.8	620.6	621.0
17.5°	598.8	632.3	613.2	612.6	608.8
20°	584.4	621.2	595.9	594.8	590.7
22.5°	568.9	606.6	580.5	578.4	589.5
25°	552.1	587.4	560.6	577.4	586.7
27.5°	531.2	562.3	544.0	567.7	579.5
30°	509.9	536.4	526.9	560.1	580.9
32.5°	489.9	509.4	512.9	557.2	560.6
35°	471.1	484.1	491.4	536.0	554.3
37.5°	450.3	453.9	473.2	527.2	544.8
40°	429.2	427.0	457.9	512.7	537.0
42.5°	406.5	405.7	441.6	505.4	517.5
45°	385.0	386.7	418.5	484.8	502.9
47.5°	362.9	365.1	396.6	462.2	484.7
50°	337.3	340.2	377.0	442.1	471.1
52.5°	309.6	315.1	358.0	423.1	452.3
55°	283.5	288.2	333.9	406.9	439.2
57.5°	259.8	262.5	308.9	386.4	410.8
60°	236.4	237.1	285.4	363.7	387.1
62.5°	209.6	210.8	261.2	336.9	368.2
65°	179.5	185.2	235.2	311.3	339.5
67.5°	151.3	161.2	208.7	287.8	302.6
70°	121.2	138.0	182.6	260.2	270.6
72.5°	93.6	113.3	156.0	229.3	243.9
75°	67.9	89.9	131.1	201.5	214.2
77.5°	45.7	68.1	107.9	170.9	187.7
80°	27.3	49.8	87.2	142.5	161.4
82.5°	14.0	33.4	67.6	119.5	136.4
85°	6.1	21.1	51.1	99.2	113.8
87.5°	1.7	12.0	37.6	80.2	92.6
90°	0.1	6.3	26.8	62.9	74.1
92.5°	0.1	3.0	18.9	47.5	56.1
95°	0.1	1.6	11.8	34.5	42.1
97.5°	0.1	0.9	7.1	24.4	30.9
100°	0.1	0.8	4.2	16.2	22.1
102.5°	0.1	0.9	2.9	10.3	14.4
105°	0.1	0.9	2.4	6.7	9.5
107.5°	0.3	0.9	2.1	5.0	6.6
110°	0.1	0.8	2.2	3.8	5.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.1	3.2	3.8
115°	0.1	0.5	1.8	3.0	3.2
117.5°	0.3	0.4	1.5	3.0	3.2
120°	0.3	0.3	1.2	2.9	3.3
122.5°	0.3	0.3	0.9	2.6	3.2
125°	0.1	0.3	0.8	2.0	2.8
127.5°	0.3	0.3	0.7	1.6	2.1
130°	0.3	0.3	0.5	1.2	1.6
132.5°	0.3	0.3	0.4	0.9	1.2
135°	0.3	0.3	0.3	0.7	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)