

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: P517875

Luminaire Tested: HVL8-2-LD4-1HI-40-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: P517875
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1HI-40-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2007.0 lumens
Efficiency: N/A
Efficacy: 93.3 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

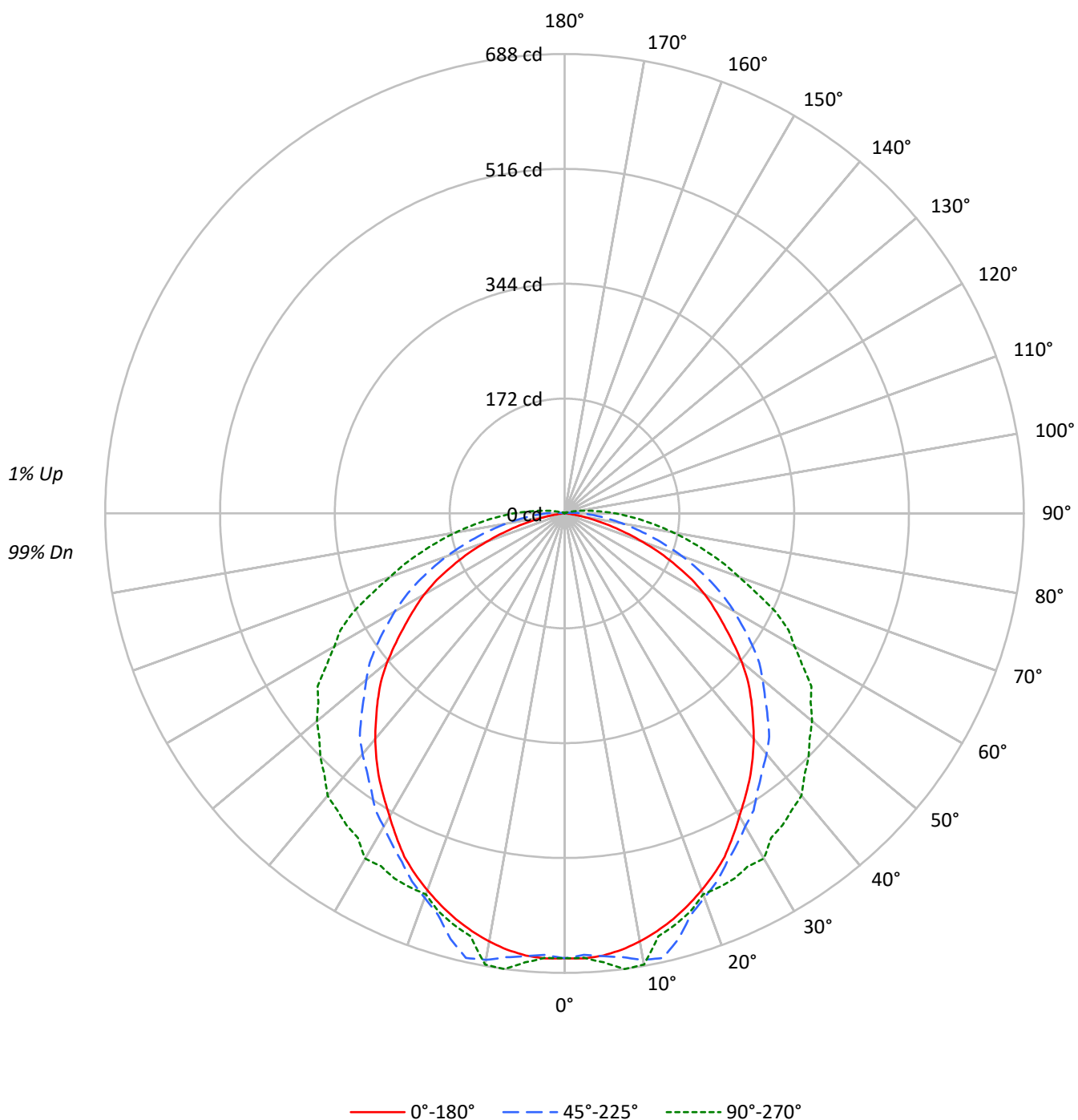
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5378	5378	5378
5°	5347	5284	5352
10°	5257	5342	5385
15°	5142	5185	4998
20°	5007	4845	4780
25°	4865	4623	4810
30°	4660	4443	4863
35°	4508	4272	4777
40°	4345	4139	4807
45°	4169	3974	4720
50°	3960	3799	4684
55°	3665	3613	4682
60°	3427	3363	4482
65°	2988	3067	4338
70°	2393	2689	3891
75°	1661	2237	3551
80°	887	1782	3188
85°	294	1316	2809

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4720 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.0	3.2
10°-20°	182.3	9.1
20°-30°	271.3	13.5
30°-40°	326.1	16.2
40°-50°	343.3	17.1
50°-60°	318.5	15.9
60°-70°	251.8	12.5
70°-80°	153.8	7.7
80°-90°	67.0	3.3
90°-100°	20.9	1.0
100°-110°	4.7	0.2
110°-120°	1.9	0.1
120°-130°	1.1	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°	517.7	25.8
0°-40°	843.8	42.0
0°-60°	1505.5	75.0
0°-90°	1978.2	98.6
90°-120°	27.4	1.4
90°-150°	28.8	1.4
90°-180°	29.0	1.4
0°-180°	2007.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	666	666	666	666	666	
5°	665	663	666	673	675	63
15°	629	653	660	638	638	177
25°	567	604	576	593	603	260
35°	484	498	505	551	570	303
45°	396	397	430	498	517	305
55°	291	296	343	418	451	262
65°	184	190	242	320	349	183
75°	70	92	135	207	220	76
85°	6	22	52	102	117	10
90°	0	6	28	65	76	0
95°	0	2	12	35	43	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	666.2	666.2	666.2	666.2	666.2
2.5°	667.0	665.3	661.6	665.1	666.1
5°	664.6	663.2	665.5	673.0	674.9
7.5°	659.0	664.2	670.3	683.9	688.2
10°	650.7	660.5	678.8	690.4	685.9
12.5°	640.7	657.3	681.8	659.3	648.8
15°	629.0	653.2	659.6	637.7	638.1
17.5°	615.3	649.8	630.1	629.6	625.6
20°	600.5	638.4	612.3	611.3	607.0
22.5°	584.7	623.3	596.6	594.4	605.8
25°	567.4	603.7	576.1	593.3	603.0
27.5°	545.8	577.9	559.0	583.4	595.5
30°	524.0	551.3	541.5	575.6	597.0
32.5°	503.5	523.4	527.1	572.6	576.1
35°	484.1	497.5	505.0	550.9	569.6
37.5°	462.8	466.4	486.3	541.8	559.8
40°	441.1	438.8	470.5	526.8	551.8
42.5°	417.7	416.9	453.8	519.4	531.9
45°	395.6	397.4	430.1	498.2	516.8
47.5°	372.9	375.2	407.5	475.0	498.1
50°	346.6	349.6	387.5	454.4	484.1
52.5°	318.1	323.8	367.9	434.8	464.8
55°	291.4	296.1	343.1	418.1	451.4
57.5°	266.9	269.8	317.4	397.1	422.2
60°	242.9	243.6	293.3	373.8	397.8
62.5°	215.4	216.6	268.4	346.2	378.4
65°	184.4	190.3	241.7	319.9	348.9
67.5°	155.5	165.7	214.4	295.7	310.9
70°	124.6	141.8	187.7	267.4	278.1
72.5°	96.2	116.4	160.3	235.6	250.7
75°	69.8	92.4	134.8	207.1	220.1
77.5°	47.0	70.0	110.9	175.6	192.8
80°	28.1	51.2	89.6	146.4	165.8
82.5°	14.4	34.3	69.5	122.8	140.2
85°	6.2	21.7	52.5	101.9	117.0
87.5°	1.8	12.3	38.7	82.4	95.1
90°	0.1	6.5	27.5	64.6	76.1
92.5°	0.1	3.1	19.4	48.9	57.7
95°	0.1	1.6	12.1	35.4	43.3
97.5°	0.1	0.9	7.3	25.1	31.8
100°	0.1	0.8	4.3	16.7	22.7
102.5°	0.1	0.9	3.0	10.6	14.8
105°	0.1	0.9	2.4	6.9	9.8
107.5°	0.3	0.9	2.2	5.2	6.8
110°	0.1	0.8	2.3	3.9	5.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.7	2.2	3.3	3.9
115°	0.1	0.5	1.9	3.1	3.3
117.5°	0.3	0.4	1.5	3.1	3.3
120°	0.3	0.3	1.2	3.0	3.4
122.5°	0.3	0.3	0.9	2.7	3.3
125°	0.1	0.3	0.8	2.0	2.8
127.5°	0.3	0.3	0.7	1.6	2.2
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)