

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: P517723

Luminaire Tested: HVL8-1-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: P517723
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1HI-30-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 976.0 lumens
Efficiency: N/A
Efficacy: 91.2 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.36
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

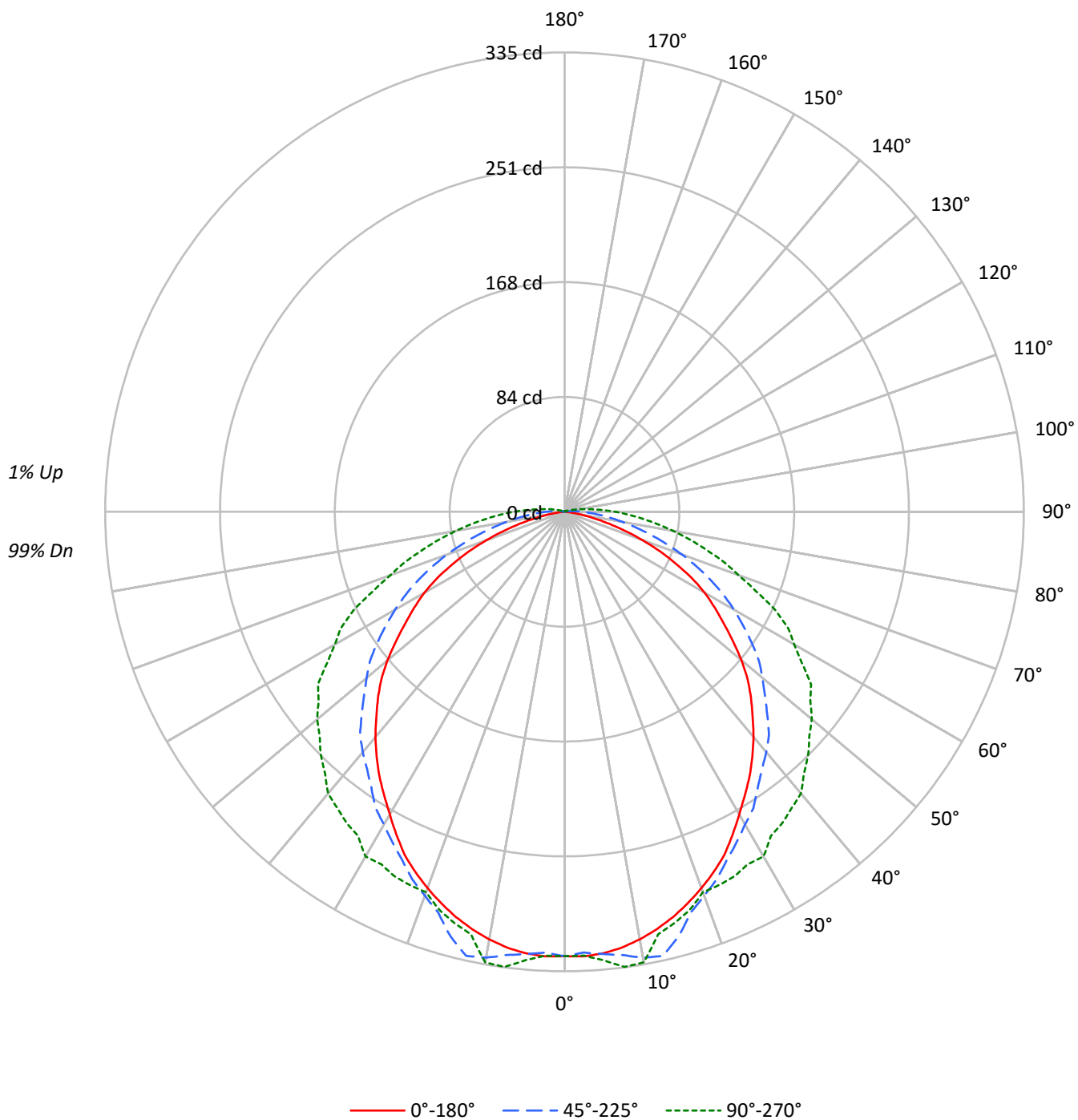
Input Watts (W): 10.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	5231	5231	5231
5°	5163	5113	5205
10°	5041	5145	5237
15°	4895	4968	4861
20°	4730	4621	4649
25°	4561	4389	4678
30°	4333	4195	4729
35°	4155	4013	4646
40°	3966	3866	4674
45°	3765	3688	4590
50°	3533	3502	4555
55°	3222	3305	4553
60°	2959	3049	4358
65°	2524	2751	4220
70°	1962	2382	3783
75°	1304	1946	3453
80°	655	1518	3099
85°	191	1081	2732

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4590 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.1	3.2
10°-20°	88.7	9.1
20°-30°	131.9	13.5
30°-40°	158.6	16.2
40°-50°	166.9	17.1
50°-60°	154.9	15.9
60°-70°	122.5	12.5
70°-80°	74.8	7.7
80°-90°	32.6	3.3
90°-100°	10.2	1.0
100°-110°	2.3	0.2
110°-120°	0.9	0.1
120°-130°	0.5	0.1
130°-140°	0.1	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°	251.7	25.8
0°-40°	410.3	42.0
0°-60°	732.1	75.0
0°-90°	962.0	98.6
90°-120°	13.4	1.4
90°-150°	14.0	1.4
90°-180°	14.0	1.4
0°-180°	976.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	324	324	324	324	324	
5°	323	322	324	327	328	31
15°	306	318	321	310	310	86
25°	276	294	280	288	293	127
35°	235	242	246	268	277	147
45°	192	193	209	242	251	148
55°	142	144	167	203	220	127
65°	90	92	118	156	170	89
75°	34	45	66	101	107	37
85°	3	11	26	50	57	5
90°	0	3	13	31	37	0
95°	0	1	6	17	21	0
105°	0	0	1	3	5	0
115°	0	0	1	2	2	0
125°	0	0	0	1	1	0
135°	0	0	0	0	0	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°	324.0	324.0	324.0	324.0	324.0
2.5°	324.4	323.5	321.7	323.5	323.9
5°	323.2	322.5	323.6	327.3	328.2
7.5°	320.5	323.0	326.0	332.6	334.7
10°	316.5	321.2	330.1	335.7	333.5
12.5°	311.6	319.6	331.6	320.6	315.5
15°	305.9	317.6	320.7	310.1	310.3
17.5°	299.2	316.0	306.4	306.2	304.2
20°	292.0	310.4	297.8	297.3	295.2
22.5°	284.3	303.1	290.1	289.1	294.6
25°	275.9	293.6	280.2	288.5	293.2
27.5°	265.4	281.0	271.8	283.7	289.6
30°	254.8	268.1	263.3	279.9	290.3
32.5°	244.8	254.6	256.3	278.4	280.2
35°	235.4	241.9	245.6	267.9	277.0
37.5°	225.0	226.8	236.5	263.5	272.2
40°	214.5	213.4	228.8	256.2	268.3
42.5°	203.1	202.7	220.7	252.6	258.6
45°	192.4	193.2	209.1	242.3	251.3
47.5°	181.4	182.5	198.2	231.0	242.2
50°	168.6	170.0	188.4	221.0	235.4
52.5°	154.7	157.5	178.9	211.5	226.0
55°	141.7	144.0	166.8	203.3	219.5
57.5°	129.8	131.2	154.4	193.1	205.3
60°	118.1	118.5	142.6	181.8	193.4
62.5°	104.7	105.3	130.5	168.4	184.0
65°	89.7	92.5	117.5	155.6	169.7
67.5°	75.6	80.6	104.3	143.8	151.2
70°	60.6	69.0	91.3	130.0	135.2
72.5°	46.8	56.6	77.9	114.6	121.9
75°	33.9	44.9	65.5	100.7	107.0
77.5°	22.8	34.1	53.9	85.4	93.8
80°	13.7	24.9	43.6	71.2	80.6
82.5°	7.0	16.7	33.8	59.7	68.2
85°	3.0	10.6	25.5	49.6	56.9
87.5°	0.9	6.0	18.8	40.1	46.3
90°	0.1	3.2	13.4	31.4	37.0
92.5°	0.1	1.5	9.4	23.8	28.0
95°	0.1	0.8	5.9	17.2	21.1
97.5°	0.1	0.5	3.6	12.2	15.4
100°	0.1	0.4	2.1	8.1	11.0
102.5°	0.1	0.5	1.5	5.1	7.2
105°	0.1	0.5	1.2	3.4	4.8
107.5°	0.1	0.5	1.1	2.5	3.3
110°	0.1	0.4	1.1	1.9	2.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	1.1	1.6	1.9
115°	0.1	0.3	0.9	1.5	1.6
117.5°	0.1	0.2	0.7	1.5	1.6
120°	0.1	0.1	0.6	1.5	1.6
122.5°	0.1	0.1	0.5	1.3	1.6
125°	0.1	0.1	0.4	1.0	1.4
127.5°	0.1	0.1	0.3	0.8	1.1
130°	0.1	0.1	0.3	0.6	0.8
132.5°	0.1	0.1	0.2	0.5	0.6
135°	0.1	0.1	0.1	0.3	0.5
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)