

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: P517809

Luminaire Tested: HVL8-1-LD4-2STD-35-UNV-O-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: P517809
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2STD-35-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1322.0 lumens
Efficiency: N/A
Efficacy: 81.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

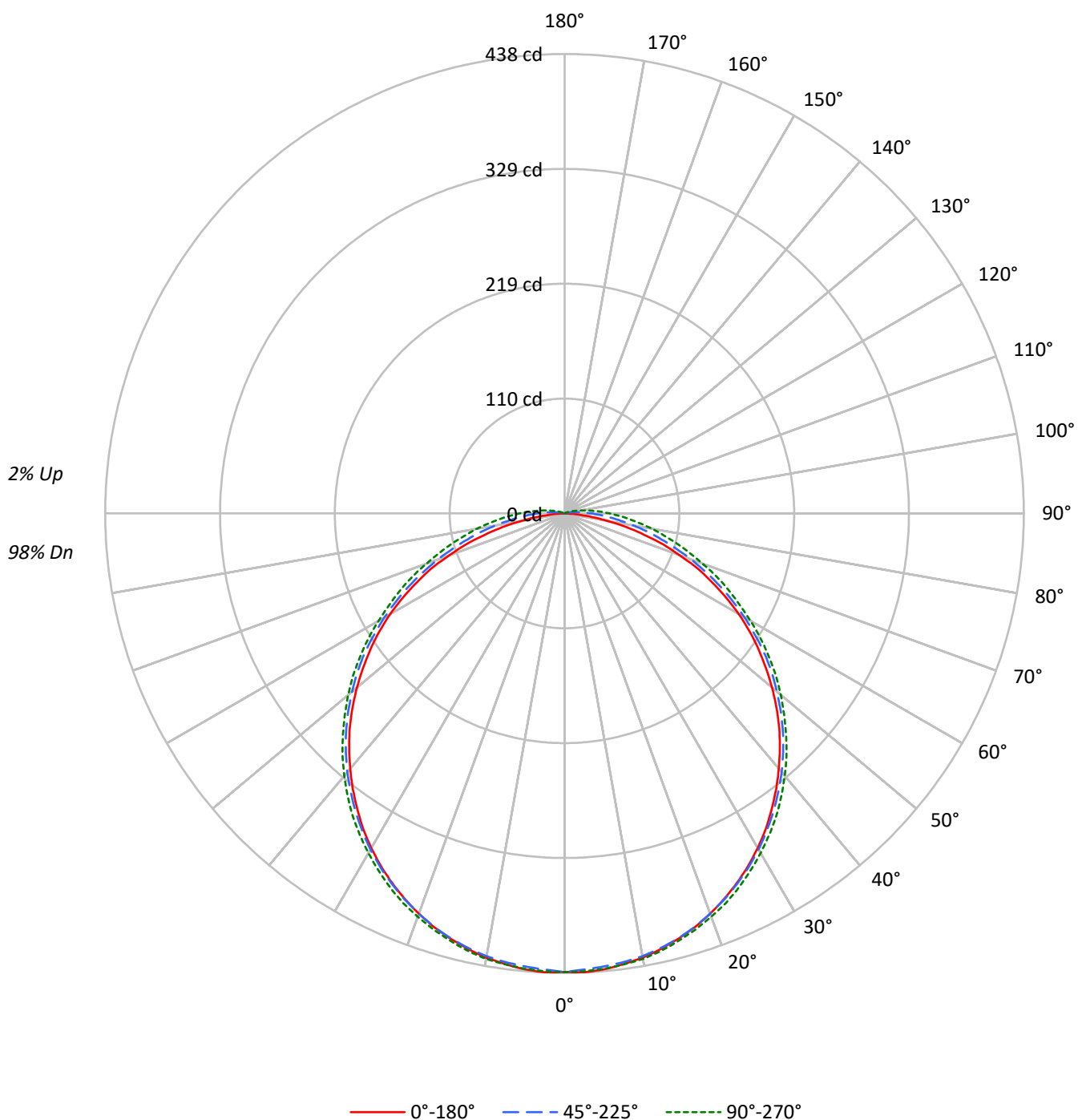
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	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°	7059	7059	7059
5°	6970	6849	6909
10°	6849	6678	6771
15°	6716	6496	6605
20°	6578	6300	6443
25°	6429	6102	6278
30°	6265	5895	6093
35°	6077	5675	5908
40°	5880	5443	5692
45°	5668	5196	5460
50°	5415	4917	5209
55°	5138	4614	4935
60°	4818	4240	4612
65°	4371	3828	4292
70°	3785	3352	3923
75°	3023	2843	3585
80°	2031	2339	3276
85°	867	1832	2987

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5668 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.4	3.1
10°-20°	118.7	9.0
20°-30°	180.1	13.6
30°-40°	217.8	16.5
40°-50°	227.2	17.2
50°-60°	207.7	15.7
60°-70°	161.9	12.2
70°-80°	101.3	7.7
80°-90°	46.0	3.5
90°-100°	15.4	1.2
100°-110°	3.9	0.3
110°-120°	0.6	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	340.1	25.7
0°-40°	557.9	42.2
0°-60°	992.8	75.1
0°-90°	1302.1	98.5
90°-120°	19.9	1.5
90°-150°	19.9	1.5
90°-180°	20.0	1.5
0°-180°	1322.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	437	437	437	437	437	
5°	436	436	434	436	436	41
15°	420	420	419	422	422	118
25°	389	389	390	393	394	179
35°	344	346	347	351	352	215
45°	290	292	295	298	299	223
55°	226	229	233	236	238	202
65°	155	158	164	170	173	154
75°	79	84	96	107	111	84
85°	14	25	43	57	62	17
90°	0	9	26	38	43	1
95°	0	2	13	24	28	0
105°	0	0	2	6	9	0
115°	0	0	0	1	2	0
125°	0	0	0	0	0	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°	437.2	437.2	437.2	437.2	437.2
2.5°	437.8	437.1	435.2	437.1	437.0
5°	436.3	435.5	433.5	435.6	435.6
7.5°	433.4	433.1	431.4	433.7	433.7
10°	430.0	429.9	428.5	431.1	431.2
12.5°	425.3	425.7	424.4	426.8	427.1
15°	419.7	420.4	419.3	421.7	421.6
17.5°	413.6	414.0	413.2	415.9	415.8
20°	406.1	406.6	406.0	408.8	409.1
22.5°	397.8	398.5	398.4	401.3	402.1
25°	388.9	389.2	389.6	392.9	393.5
27.5°	379.1	379.6	380.3	383.3	383.9
30°	368.4	369.2	370.0	373.1	374.0
32.5°	357.0	357.9	358.9	362.9	363.3
35°	344.3	345.8	347.3	350.8	352.2
37.5°	331.5	333.4	334.8	338.5	339.6
40°	318.0	319.9	322.1	326.0	326.7
42.5°	303.9	306.1	308.7	312.2	313.4
45°	289.6	292.2	294.6	297.5	298.9
47.5°	274.3	276.9	279.7	283.0	284.0
50°	258.4	261.4	264.5	267.6	269.2
52.5°	242.1	245.7	249.2	252.5	254.1
55°	226.0	228.7	232.9	236.3	237.9
57.5°	209.3	211.6	215.4	221.0	221.8
60°	192.3	194.4	198.3	202.8	204.7
62.5°	173.6	176.4	180.5	186.3	187.9
65°	155.3	158.0	163.5	170.0	172.6
67.5°	137.7	138.6	145.6	152.4	156.8
70°	116.9	120.4	128.5	136.9	140.2
72.5°	99.0	102.5	111.4	121.2	125.3
75°	78.6	83.5	95.7	107.1	111.1
77.5°	60.8	66.2	81.2	92.8	97.4
80°	42.5	50.8	67.2	80.2	85.2
82.5°	26.7	37.0	54.5	68.1	72.6
85°	13.6	25.1	43.2	57.1	62.2
87.5°	3.6	16.3	33.6	46.9	52.1
90°	0.1	9.4	25.5	38.2	42.9
92.5°	0.1	5.3	19.0	30.4	35.1
95°	0.1	2.5	13.2	23.9	27.6
97.5°	0.1	1.0	9.1	18.0	21.7
100°	0.1	0.5	5.8	13.1	16.3
102.5°	0.2	0.3	3.6	9.4	12.0
105°	0.2	0.3	2.2	6.4	8.6
107.5°	0.2	0.3	1.2	4.3	5.9
110°	0.3	0.3	0.7	2.7	3.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.3	0.4	1.8	2.6
115°	0.3	0.3	0.4	1.1	1.6
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)