

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: P517889

Luminaire Tested: HVL8-2-LD4-1LO-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: P517889
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1LO-35-UNV-O-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: 1292.0 lumens
Efficiency: N/A
Efficacy: 112.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

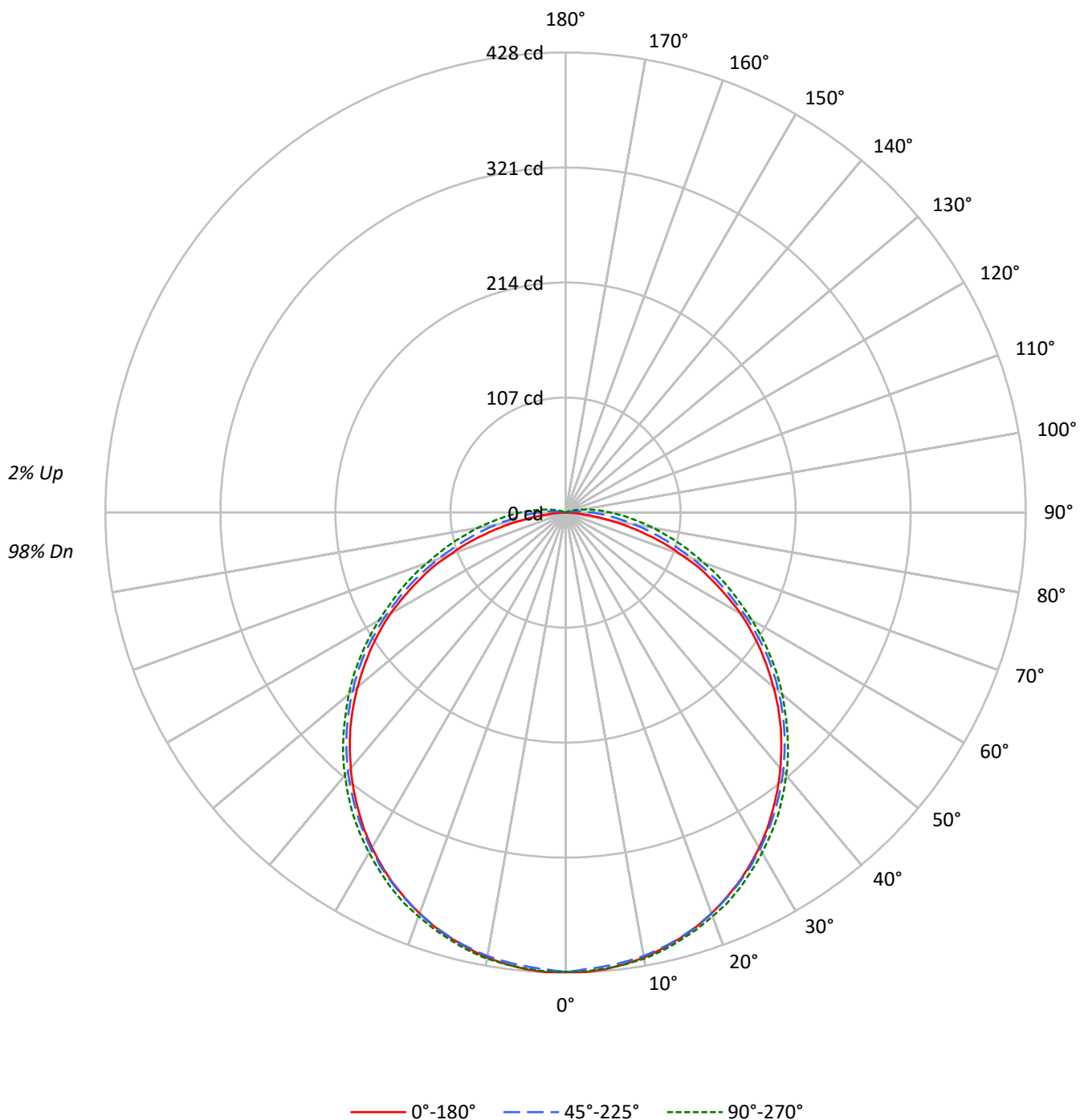
Input Watts (W): 11.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517889

CATALOG NUMBER: HVL8-2-LD4-1LO-35-UNV-O-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517889

CATALOG NUMBER: HVL8-2-LD4-1LO-35-UNV-O-EDD-90

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	102	98	94	105	100	96	92	95	92	89		91	88	86		87
2	98	89	82	76	95	87	80	75	83	77	73		79	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	52		62	56	51		60
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		54
6	69	55	46	40	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°	3450	3450	3450
5°	3430	3364	3376
10°	3395	3296	3309
15°	3353	3221	3227
20°	3309	3140	3148
25°	3259	3056	3068
30°	3202	2967	2977
35°	3133	2871	2887
40°	3061	2770	2781
45°	2983	2660	2668
50°	2885	2534	2546
55°	2778	2398	2411
60°	2652	2222	2254
65°	2460	2027	2098
70°	2193	1799	1917
75°	1830	1551	1752
80°	1310	1307	1602
85°	631	1058	1457

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2983 cd/sqm

TEST NUMBER: P517889

CATALOG NUMBER: HVL8-2-LD4-1LO-35-UNV-O-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.4	3.1
10°-20°	116.0	9.0
20°-30°	176.0	13.6
30°-40°	212.8	16.5
40°-50°	222.1	17.2
50°-60°	203.0	15.7
60°-70°	158.3	12.2
70°-80°	99.0	7.7
80°-90°	45.0	3.5
90°-100°	15.1	1.2
100°-110°	3.8	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°	332.4	25.7
0°-40°	545.2	42.2
0°-60°	970.3	75.1
0°-90°	1272.6	98.5
90°-120°	19.4	1.5
90°-150°	19.4	1.5
90°-180°	19.0	1.5
0°-180°	1292.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	427	427	427	427	427	
5°	426	426	424	426	426	40
15°	410	411	410	412	412	116
25°	380	380	381	384	385	175
35°	336	338	339	343	344	211
45°	283	286	288	291	292	218
55°	221	224	228	231	232	197
65°	152	154	160	166	169	150
75°	77	82	94	105	109	82
85°	13	25	42	56	61	17
90°	0	9	25	37	42	1
95°	0	2	13	23	27	0
105°	0	0	2	6	8	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

TEST NUMBER: P517889

CATALOG NUMBER: HVL8-2-LD4-1LO-35-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	427.3	427.3	427.3	427.3	427.3
2.5°	427.8	427.2	425.3	427.2	427.1
5°	426.4	425.6	423.7	425.7	425.7
7.5°	423.6	423.3	421.6	423.9	423.9
10°	420.3	420.2	418.8	421.3	421.4
12.5°	415.6	416.0	414.7	417.1	417.4
15°	410.2	410.9	409.8	412.1	412.0
17.5°	404.2	404.7	403.8	406.5	406.4
20°	396.9	397.4	396.8	399.5	399.8
22.5°	388.7	389.4	389.3	392.2	393.0
25°	380.1	380.4	380.8	384.0	384.6
27.5°	370.5	371.0	371.7	374.6	375.2
30°	360.0	360.8	361.6	364.7	365.5
32.5°	348.9	349.8	350.8	354.7	355.1
35°	336.5	338.0	339.4	342.8	344.2
37.5°	324.0	325.9	327.2	330.8	331.9
40°	310.8	312.7	314.8	318.6	319.3
42.5°	297.0	299.2	301.7	305.1	306.3
45°	283.1	285.6	287.9	290.7	292.1
47.5°	268.1	270.6	273.4	276.6	277.5
50°	252.5	255.5	258.5	261.5	263.1
52.5°	236.6	240.2	243.6	246.8	248.3
55°	220.9	223.5	227.7	231.0	232.5
57.5°	204.6	206.8	210.5	216.0	216.8
60°	188.0	190.0	193.8	198.2	200.1
62.5°	169.6	172.4	176.4	182.0	183.6
65°	151.8	154.4	159.8	166.1	168.7
67.5°	134.6	135.5	142.3	149.0	153.2
70°	114.2	117.7	125.6	133.8	137.0
72.5°	96.7	100.1	108.9	118.5	122.5
75°	76.9	81.6	93.5	104.7	108.6
77.5°	59.4	64.7	79.4	90.7	95.2
80°	41.5	49.7	65.7	78.4	83.3
82.5°	26.1	36.2	53.3	66.6	70.9
85°	13.3	24.6	42.2	55.8	60.7
87.5°	3.5	15.9	32.8	45.8	50.9
90°	0.1	9.2	24.9	37.4	41.9
92.5°	0.1	5.1	18.5	29.7	34.4
95°	0.1	2.4	12.9	23.4	27.0
97.5°	0.1	1.0	8.9	17.6	21.3
100°	0.1	0.5	5.6	12.8	15.9
102.5°	0.2	0.3	3.5	9.2	11.7
105°	0.2	0.3	2.1	6.2	8.4
107.5°	0.2	0.3	1.2	4.2	5.7
110°	0.3	0.3	0.7	2.6	3.8

TEST NUMBER: P517889

CATALOG NUMBER: HVL8-2-LD4-1LO-35-UNV-O-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.3	0.4	1.7	2.5
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)