

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: P517408

Luminaire Tested: HVL12-2-LD4-3LO-35-UNV-C-EDD

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: P517408
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3LO-35-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4460.9 lumens
Efficiency: N/A
Efficacy: 128.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

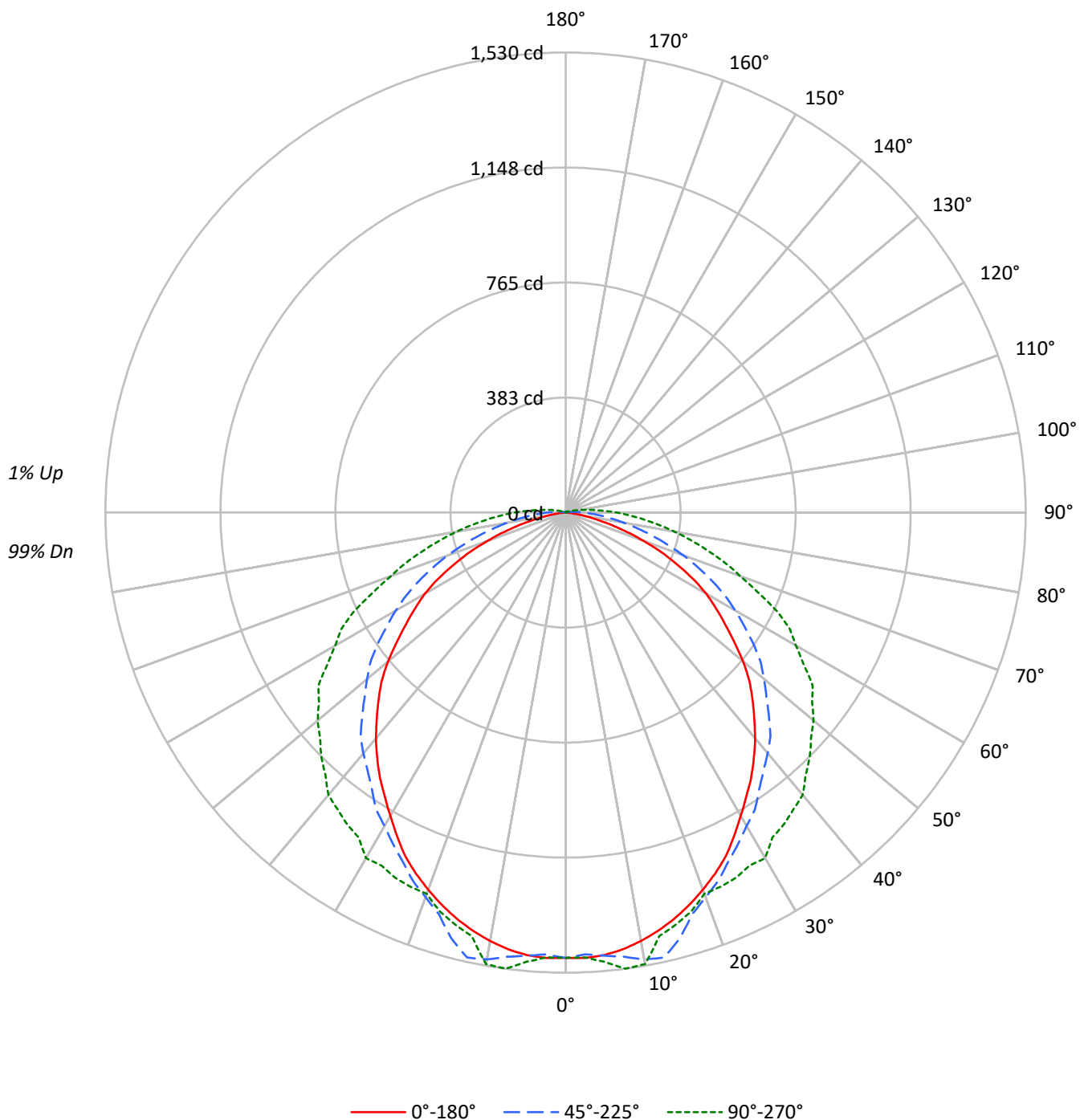
Input Watts (W): 34.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	7970	7970	7970
5°	7923	7870	7988
10°	7790	7997	8093
15°	7620	7799	7565
20°	7420	7324	7286
25°	7209	7025	7385
30°	6906	6787	7523
35°	6680	6562	7448
40°	6438	6398	7560
45°	6178	6182	7494
50°	5868	5956	7516
55°	5430	5713	7604
60°	5079	5372	7384
65°	4428	4960	7275
70°	3545	4419	6671
75°	2458	3752	6272
80°	1313	3081	5872
85°	440	2385	5526

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7604 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.3	3.2
10°-20°	405.3	9.1
20°-30°	603.0	13.5
30°-40°	724.9	16.2
40°-50°	763.0	17.1
50°-60°	707.9	15.9
60°-70°	559.7	12.5
70°-80°	341.9	7.7
80°-90°	149.0	3.3
90°-100°	46.4	1.0
100°-110°	10.4	0.2
110°-120°	4.2	0.1
120°-130°	2.3	0.1
130°-140°	0.6	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°	1150.7	25.8
0°-40°	1875.5	42.0
0°-60°	3346.4	75.0
0°-90°	4397.0	98.6
90°-120°	60.9	1.4
90°-150°	63.9	1.4
90°-180°	64.0	1.4
0°-180°	4460.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1481	1481	1481	1481	1481	
5°	1477	1474	1479	1496	1500	140
15°	1398	1452	1466	1418	1418	394
25°	1261	1342	1280	1319	1340	579
35°	1076	1106	1122	1224	1266	672
45°	879	883	956	1107	1149	678
55°	648	658	763	929	1003	582
65°	410	423	537	711	776	406
75°	155	205	300	460	489	169
85°	14	48	117	226	260	21
90°	0	14	61	144	169	1
95°	0	4	27	79	96	0
105°	0	2	5	15	22	0
115°	0	1	4	7	7	0
125°	0	1	2	4	6	0
135°	1	1	1	2	2	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: HVL12-2-LD4-3LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1480.8	1480.8	1480.8	1480.8	1480.8
2.5°	1482.6	1478.7	1470.6	1478.4	1480.5
5°	1477.2	1474.2	1479.3	1495.9	1500.1
7.5°	1464.8	1476.3	1489.9	1520.0	1529.7
10°	1446.4	1468.1	1508.9	1534.5	1524.5
12.5°	1424.1	1460.9	1515.5	1465.4	1442.2
15°	1398.2	1451.9	1466.0	1417.5	1418.4
17.5°	1367.7	1444.3	1400.6	1399.4	1390.6
20°	1334.8	1419.0	1361.1	1358.6	1349.3
22.5°	1299.5	1385.5	1326.1	1321.2	1346.6
25°	1261.2	1341.7	1280.5	1318.8	1340.2
27.5°	1213.2	1284.4	1242.5	1296.8	1323.6
30°	1164.7	1225.3	1203.6	1279.3	1327.0
32.5°	1119.1	1163.5	1171.6	1272.7	1280.5
35°	1076.0	1105.9	1122.4	1224.4	1266.0
37.5°	1028.6	1036.8	1080.8	1204.2	1244.3
40°	980.4	975.2	1045.8	1171.0	1226.5
42.5°	928.5	926.7	1008.7	1154.4	1182.2
45°	879.3	883.2	955.9	1107.4	1148.7
47.5°	828.9	834.1	905.9	1055.8	1107.1
50°	770.4	777.1	861.2	1009.9	1076.0
52.5°	707.1	719.7	817.8	966.5	1033.2
55°	647.6	658.2	762.6	929.4	1003.3
57.5°	593.3	599.7	705.6	882.6	938.4
60°	540.0	541.5	651.9	830.7	884.1
62.5°	478.7	481.4	596.7	769.5	841.0
65°	409.9	422.9	537.2	711.0	775.5
67.5°	345.7	368.3	476.6	657.3	691.1
70°	276.9	315.2	417.2	594.3	618.1
72.5°	213.9	258.8	356.3	523.7	557.2
75°	155.0	205.4	299.5	460.3	489.3
77.5°	104.4	155.7	246.4	390.3	428.6
80°	62.4	113.7	199.1	325.5	368.6
82.5°	32.0	76.3	154.4	273.0	311.6
85°	13.9	48.3	116.7	226.5	260.0
87.5°	3.9	27.5	86.0	183.1	211.5
90°	0.3	14.5	61.2	143.6	169.2
92.5°	0.3	6.9	43.1	108.6	128.2
95°	0.3	3.6	26.8	78.7	96.2
97.5°	0.3	2.1	16.3	55.8	70.6
100°	0.3	1.8	9.7	37.1	50.4
102.5°	0.3	2.1	6.6	23.5	32.9
105°	0.3	2.1	5.4	15.4	21.7
107.5°	0.6	2.1	4.8	11.5	15.1
110°	0.3	1.8	5.1	8.7	11.8

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CATALOG NUMBER: HVL12-2-LD4-3LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	1.5	4.8	7.2	8.7
115°	0.3	1.2	4.2	6.9	7.2
117.5°	0.6	0.9	3.3	6.9	7.2
120°	0.6	0.6	2.7	6.6	7.5
122.5°	0.6	0.6	2.1	6.0	7.2
125°	0.3	0.6	1.8	4.5	6.3
127.5°	0.6	0.6	1.5	3.6	4.8
130°	0.6	0.6	1.2	2.7	3.6
132.5°	0.6	0.6	0.9	2.1	2.7
135°	0.6	0.6	0.6	1.5	2.1
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)