

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: P517372

Luminaire Tested: HVL12-2-LD4-2STD-30-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: P517372
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-2STD-30-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3472.0 lumens
Efficiency: N/A
Efficacy: 103.3 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

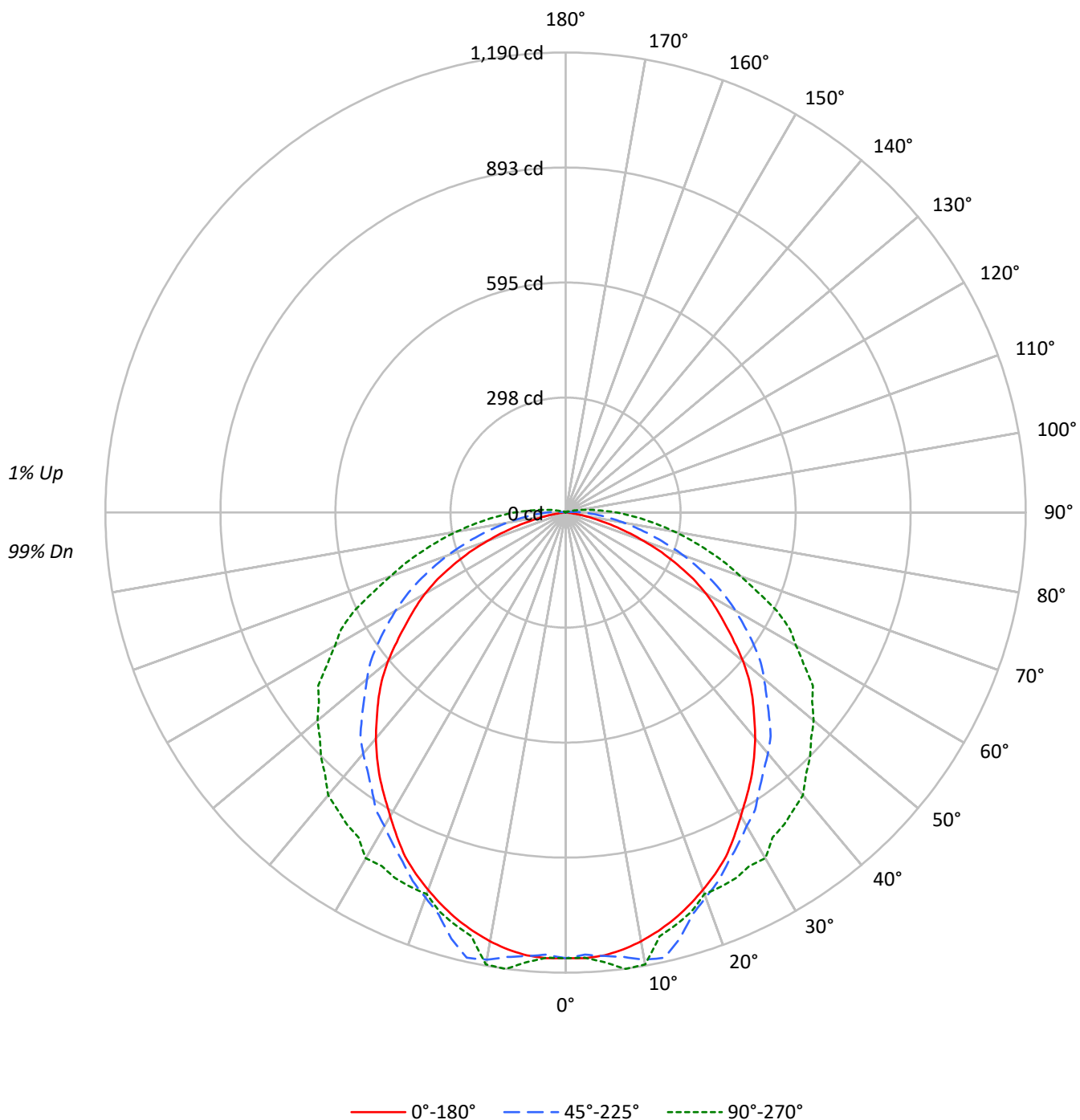
Input Watts (W): 33.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	6203	6203	6203
5°	6166	6125	6217
10°	6063	6224	6300
15°	5931	6070	5888
20°	5775	5700	5671
25°	5611	5467	5748
30°	5375	5283	5855
35°	5198	5107	5798
40°	5010	4980	5884
45°	4808	4812	5832
50°	4567	4636	5849
55°	4227	4446	5918
60°	3952	4181	5747
65°	3447	3861	5662
70°	2759	3439	5192
75°	1914	2920	4882
80°	1023	2399	4571
85°	342	1858	4302

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 5918 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.8	3.2
10°-20°	315.4	9.1
20°-30°	469.3	13.5
30°-40°	564.2	16.2
40°-50°	593.8	17.1
50°-60°	551.0	15.9
60°-70°	435.7	12.5
70°-80°	266.1	7.7
80°-90°	116.0	3.3
90°-100°	36.1	1.0
100°-110°	8.1	0.2
110°-120°	3.3	0.1
120°-130°	1.8	0.1
130°-140°	0.5	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°	895.6	25.8
0°-40°	1459.7	42.0
0°-60°	2604.5	75.0
0°-90°	3422.2	98.6
90°-120°	47.5	1.4
90°-150°	49.8	1.4
90°-180°	50.0	1.4
0°-180°	3472.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1152	1152	1152	1152	1152	
5°	1150	1147	1151	1164	1168	109
15°	1088	1130	1141	1103	1104	307
25°	982	1044	997	1026	1043	451
35°	837	861	874	953	985	523
45°	684	687	744	862	894	528
55°	504	512	594	723	781	453
65°	319	329	418	553	604	316
75°	121	160	233	358	381	132
85°	11	38	91	176	202	17
90°	0	11	48	112	132	1
95°	0	3	21	61	75	0
105°	0	2	4	12	17	0
115°	0	1	3	5	6	0
125°	0	0	1	4	5	0
135°	0	0	0	1	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1152.5	1152.5	1152.5	1152.5	1152.5
2.5°	1153.9	1150.9	1144.5	1150.6	1152.3
5°	1149.7	1147.4	1151.3	1164.3	1167.5
7.5°	1140.1	1149.0	1159.6	1183.0	1190.5
10°	1125.8	1142.7	1174.3	1194.3	1186.6
12.5°	1108.4	1137.0	1179.5	1140.5	1122.5
15°	1088.2	1130.0	1141.0	1103.2	1103.9
17.5°	1064.5	1124.1	1090.1	1089.1	1082.3
20°	1038.9	1104.4	1059.3	1057.4	1050.2
22.5°	1011.4	1078.3	1032.1	1028.3	1048.0
25°	981.6	1044.3	996.6	1026.4	1043.1
27.5°	944.3	999.7	967.0	1009.3	1030.2
30°	906.5	953.7	936.8	995.7	1032.8
32.5°	871.0	905.5	911.9	990.5	996.6
35°	837.4	860.7	873.6	953.0	985.4
37.5°	800.6	806.9	841.2	937.2	968.5
40°	763.0	759.0	814.0	911.4	954.6
42.5°	722.6	721.2	785.1	898.5	920.1
45°	684.4	687.4	744.0	861.9	894.0
47.5°	645.2	649.2	705.0	821.7	861.6
50°	599.6	604.8	670.3	786.0	837.4
52.5°	550.3	560.2	636.5	752.2	804.1
55°	504.1	512.3	593.5	723.3	780.9
57.5°	461.8	466.7	549.1	687.0	730.4
60°	420.2	421.4	507.4	646.6	688.1
62.5°	372.6	374.7	464.4	598.9	654.6
65°	319.1	329.2	418.1	553.4	603.6
67.5°	269.1	286.7	370.9	511.6	537.9
70°	215.5	245.3	324.7	462.5	481.1
72.5°	166.5	201.4	277.3	407.6	433.6
75°	120.7	159.9	233.1	358.3	380.8
77.5°	81.2	121.1	191.8	303.8	333.6
80°	48.6	88.5	155.0	253.3	286.9
82.5°	24.9	59.4	120.2	212.5	242.5
85°	10.8	37.6	90.9	176.3	202.4
87.5°	3.1	21.4	66.9	142.5	164.6
90°	0.2	11.3	47.7	111.8	131.7
92.5°	0.2	5.4	33.6	84.5	99.8
95°	0.2	2.8	20.9	61.3	74.9
97.5°	0.2	1.6	12.7	43.4	54.9
100°	0.2	1.4	7.5	28.9	39.2
102.5°	0.2	1.6	5.2	18.3	25.6
105°	0.2	1.6	4.2	12.0	16.9
107.5°	0.5	1.6	3.8	8.9	11.7
110°	0.2	1.4	4.0	6.8	9.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.2	3.8	5.6	6.8
115°	0.2	0.9	3.3	5.4	5.6
117.5°	0.5	0.7	2.6	5.4	5.6
120°	0.5	0.5	2.1	5.2	5.9
122.5°	0.5	0.5	1.6	4.7	5.6
125°	0.2	0.5	1.4	3.5	4.9
127.5°	0.5	0.5	1.2	2.8	3.8
130°	0.5	0.5	0.9	2.1	2.8
132.5°	0.5	0.5	0.7	1.6	2.1
135°	0.5	0.5	0.5	1.2	1.6
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)