

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: P517917

Luminaire Tested: HVL8-2-LD4-2HI-30-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: P517917
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2HI-30-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3358.0 lumens
Efficiency: N/A
Efficacy: 77.9 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

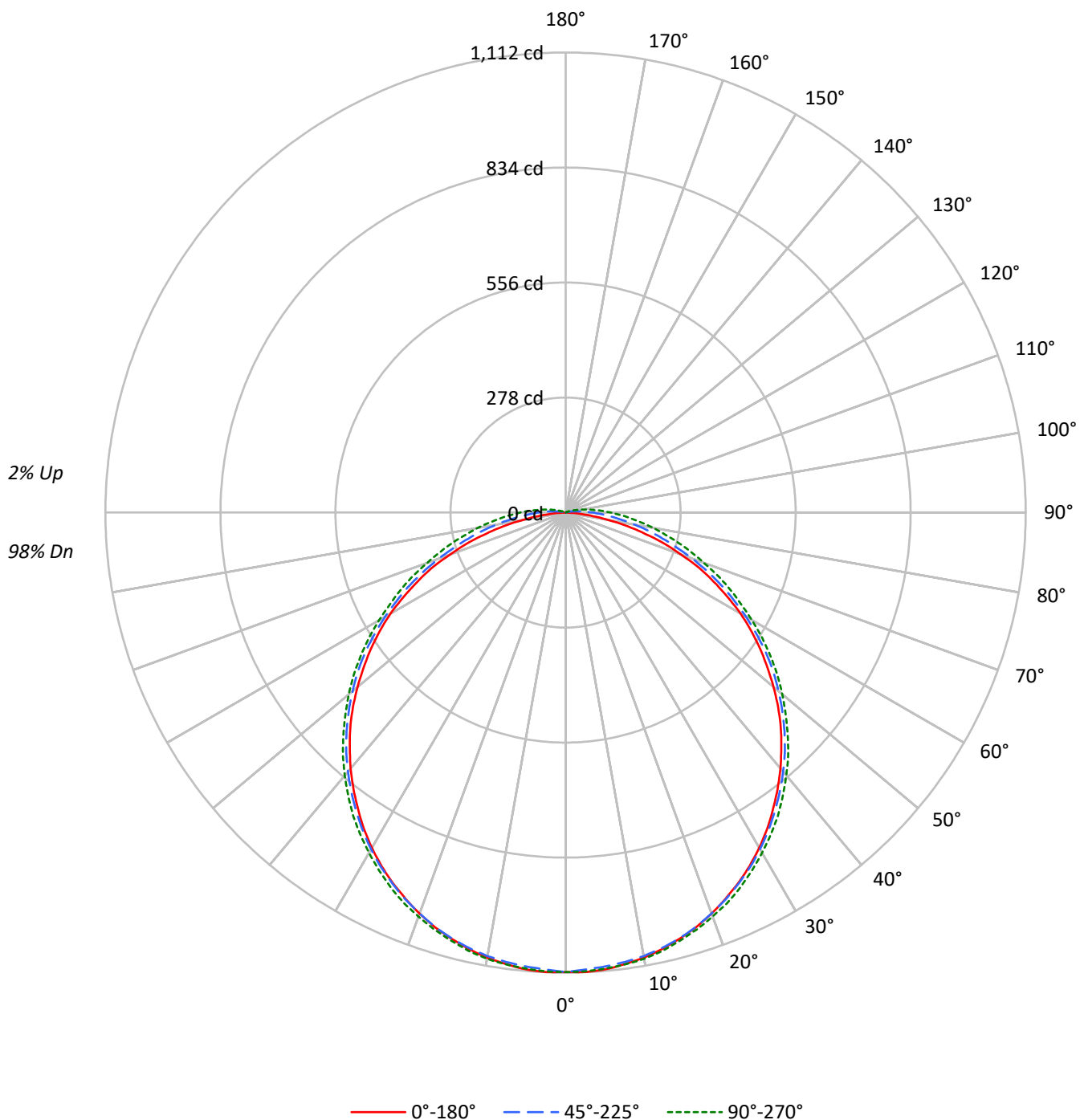
Input Watts (W): 43.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8966	8966	8966
5°	8916	8744	8774
10°	8824	8566	8599
15°	8716	8373	8387
20°	8602	8160	8182
25°	8470	7943	7974
30°	8322	7712	7738
35°	8143	7462	7503
40°	7956	7199	7230
45°	7753	6913	6935
50°	7499	6587	6617
55°	7222	6230	6267
60°	6892	5775	5859
65°	6395	5268	5452
70°	5702	4677	4982
75°	4753	4032	4553
80°	3406	3396	4162
85°	1641	2750	3791

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7753 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.1	3.1
10°-20°	301.5	9.0
20°-30°	457.4	13.6
30°-40°	553.1	16.5
40°-50°	577.1	17.2
50°-60°	527.7	15.7
60°-70°	411.3	12.2
70°-80°	257.3	7.7
80°-90°	116.9	3.5
90°-100°	39.2	1.2
100°-110°	9.8	0.3
110°-120°	1.5	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°	864.0	25.7
0°-40°	1417.1	42.2
0°-60°	2521.9	75.1
0°-90°	3307.4	98.5
90°-120°	50.6	1.5
90°-150°	50.6	1.5
90°-180°	51.0	1.5
0°-180°	3358.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1111	1111	1111	1111	1111	
5°	1108	1106	1101	1106	1106	105
15°	1066	1068	1065	1071	1071	301
25°	988	989	990	998	1000	455
35°	874	878	882	891	895	547
45°	736	742	748	756	759	567
55°	574	581	592	600	604	513
65°	395	401	415	432	438	390
75°	200	212	243	272	282	213
85°	35	64	110	145	158	44
90°	0	24	65	97	109	1
95°	0	6	34	61	70	0
105°	0	1	6	16	22	1
115°	1	1	1	3	4	1
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°	1110.6	1110.6	1110.6	1110.6	1110.6
2.5°	1111.9	1110.4	1105.4	1110.4	1110.1
5°	1108.3	1106.2	1101.2	1106.4	1106.4
7.5°	1100.9	1100.2	1095.7	1101.7	1101.7
10°	1092.3	1092.0	1088.4	1094.9	1095.2
12.5°	1080.3	1081.3	1077.9	1084.2	1085.0
15°	1066.1	1067.9	1065.1	1071.1	1070.8
17.5°	1050.7	1051.7	1049.6	1056.4	1056.2
20°	1031.6	1032.9	1031.3	1038.4	1039.1
22.5°	1010.3	1012.2	1011.9	1019.2	1021.3
25°	987.8	988.6	989.7	998.0	999.6
27.5°	963.0	964.3	966.1	973.7	975.3
30°	935.7	937.8	939.9	947.8	949.9
32.5°	906.9	909.0	911.6	921.9	922.9
35°	874.5	878.4	882.1	891.0	894.6
37.5°	842.0	847.0	850.4	859.8	862.7
40°	807.7	812.7	818.2	828.1	830.0
42.5°	771.8	777.6	784.1	793.0	796.2
45°	735.7	742.2	748.3	755.6	759.3
47.5°	696.7	703.2	710.6	718.9	721.3
50°	656.4	664.0	671.8	679.7	683.9
52.5°	615.0	624.2	633.1	641.4	645.4
55°	574.2	581.0	591.7	600.3	604.3
57.5°	531.7	537.5	547.2	561.3	563.4
60°	488.5	493.8	503.7	515.3	520.0
62.5°	440.9	448.0	458.4	473.1	477.3
65°	394.6	401.4	415.2	431.7	438.5
67.5°	349.8	352.1	369.9	387.2	398.2
70°	296.9	305.8	326.5	347.7	356.1
72.5°	251.3	260.2	283.0	307.9	318.4
75°	199.8	212.1	243.0	272.0	282.2
77.5°	154.5	168.1	206.3	235.6	247.4
80°	107.9	129.1	170.7	203.7	216.5
82.5°	67.8	94.0	138.5	173.1	184.3
85°	34.6	63.9	109.7	145.0	157.9
87.5°	9.2	41.4	85.4	119.1	132.2
90°	0.3	23.8	64.7	97.1	108.9
92.5°	0.3	13.4	48.2	77.2	89.3
95°	0.3	6.3	33.5	60.7	70.2
97.5°	0.3	2.6	23.0	45.8	55.2
100°	0.3	1.3	14.7	33.3	41.4
102.5°	0.5	0.8	9.2	23.8	30.4
105°	0.5	0.8	5.5	16.2	21.7
107.5°	0.5	0.8	3.1	11.0	14.9
110°	0.8	0.8	1.8	6.8	9.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	0.8	1.0	4.5	6.5
115°	0.8	0.8	1.0	2.9	4.2
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)