

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: P517826

Luminaire Tested: HVL8-1-LD4-3HI-35-UNV-O-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: P517826
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3HI-35-UNV-O-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3207.1 lumens
Efficiency: N/A
Efficacy: 101.8 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

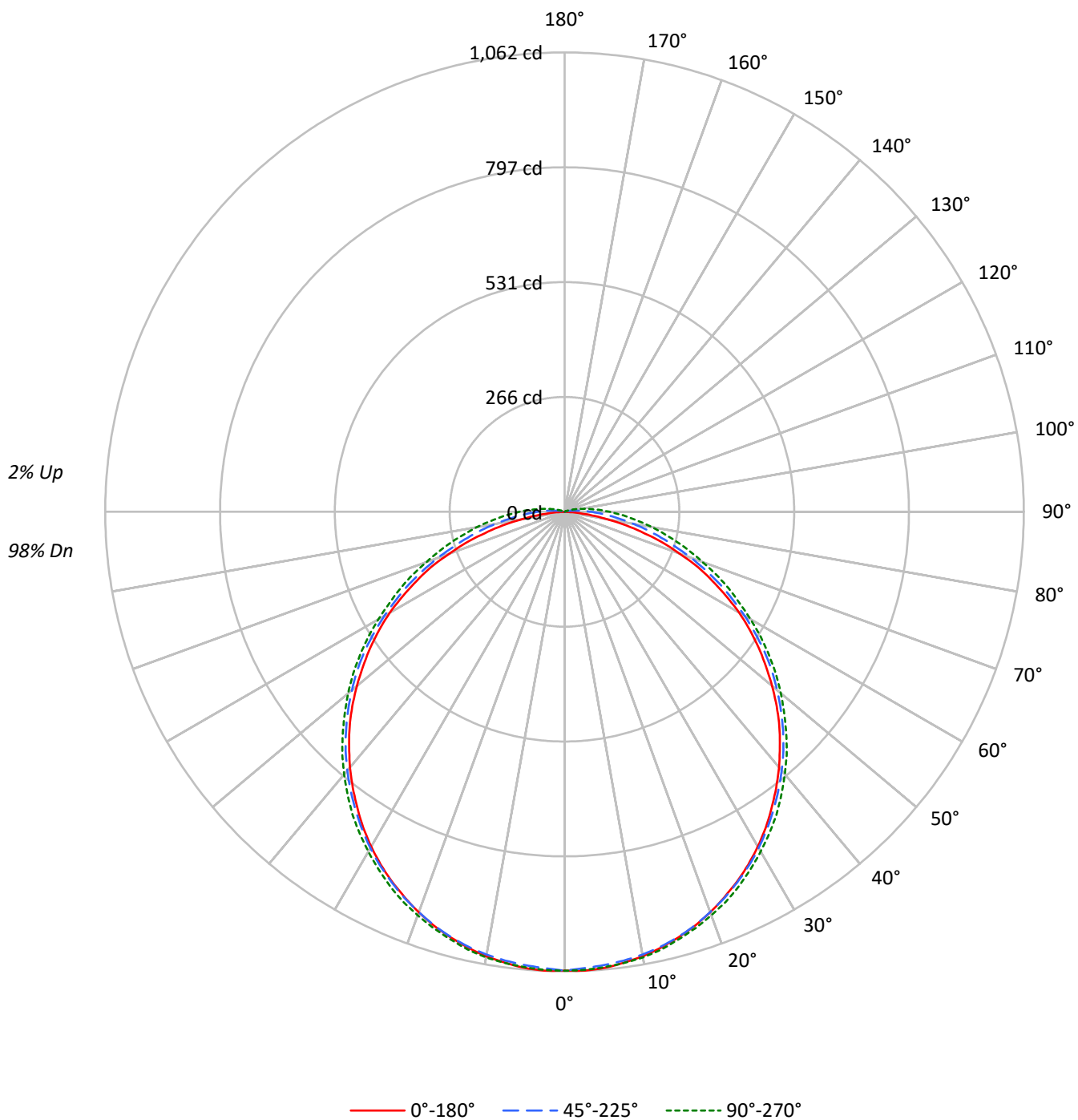
Input Watts (W): 31.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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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°	17126	17126	17126
5°	16907	16617	16760
10°	16615	16199	16423
15°	16292	15759	16021
20°	15959	15283	15629
25°	15594	14804	15232
30°	15199	14303	14780
35°	14740	13764	14331
40°	14264	13204	13808
45°	13751	12603	13245
50°	13137	11927	12639
55°	12466	11196	11970
60°	11692	10286	11190
65°	10604	9284	10415
70°	9179	8134	9517
75°	7338	6893	8697
80°	4923	5674	7952
85°	2104	4444	7241

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 13751 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.4	3.1
10°-20°	287.9	9.0
20°-30°	436.9	13.6
30°-40°	528.2	16.5
40°-50°	551.2	17.2
50°-60°	503.9	15.7
60°-70°	392.8	12.2
70°-80°	245.7	7.7
80°-90°	111.6	3.5
90°-100°	37.4	1.2
100°-110°	9.4	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°	825.2	25.7
0°-40°	1353.4	42.2
0°-60°	2408.5	75.1
0°-90°	3158.7	98.5
90°-120°	48.4	1.5
90°-150°	48.4	1.5
90°-180°	48.0	1.5
0°-180°	3207.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1061	1061	1061	1061	1061	
5°	1058	1056	1052	1057	1057	101
15°	1018	1020	1017	1023	1023	287
25°	943	944	945	953	955	435
35°	835	839	842	851	854	523
45°	703	709	715	722	725	541
55°	548	555	565	573	577	490
65°	377	383	397	412	419	373
75°	191	202	232	260	270	203
85°	33	61	105	138	151	42
90°	0	23	62	93	104	1
95°	0	6	32	58	67	0
105°	0	1	5	16	21	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°	1060.7	1060.7	1060.7	1060.7	1060.7
2.5°	1061.9	1060.4	1055.7	1060.4	1060.2
5°	1058.4	1056.4	1051.7	1056.7	1056.7
7.5°	1051.4	1050.7	1046.4	1052.2	1052.2
10°	1043.2	1042.9	1039.4	1045.7	1045.9
12.5°	1031.7	1032.7	1029.4	1035.4	1036.2
15°	1018.2	1019.9	1017.2	1022.9	1022.7
17.5°	1003.4	1004.4	1002.4	1008.9	1008.7
20°	985.2	986.4	984.9	991.7	992.4
22.5°	964.9	966.7	966.4	973.4	975.4
25°	943.4	944.2	945.2	953.2	954.7
27.5°	919.7	920.9	922.7	929.9	931.4
30°	893.7	895.7	897.7	905.2	907.2
32.5°	866.1	868.1	870.6	880.4	881.4
35°	835.1	838.9	842.4	850.9	854.4
37.5°	804.1	808.9	812.1	821.1	823.9
40°	771.4	776.1	781.4	790.9	792.6
42.5°	737.1	742.6	748.9	757.4	760.4
45°	702.6	708.9	714.6	721.6	725.1
47.5°	665.4	671.6	678.6	686.6	688.9
50°	626.9	634.1	641.6	649.1	653.1
52.5°	587.4	596.1	604.6	612.6	616.4
55°	548.3	554.8	565.1	573.3	577.1
57.5°	507.8	513.3	522.6	536.1	538.1
60°	466.6	471.6	481.1	492.1	496.6
62.5°	421.1	427.8	437.8	451.8	455.8
65°	376.8	383.3	396.6	412.3	418.8
67.5°	334.1	336.3	353.3	369.8	380.3
70°	283.5	292.1	311.8	332.1	340.1
72.5°	240.0	248.5	270.3	294.1	304.1
75°	190.8	202.5	232.0	259.8	269.5
77.5°	147.5	160.5	197.0	225.0	236.3
80°	103.0	123.3	163.0	194.5	206.8
82.5°	64.8	89.8	132.3	165.3	176.0
85°	33.0	61.0	104.8	138.5	150.8
87.5°	8.8	39.5	81.5	113.8	126.3
90°	0.3	22.8	61.8	92.8	104.0
92.5°	0.3	12.8	46.0	73.8	85.3
95°	0.3	6.0	32.0	58.0	67.0
97.5°	0.3	2.5	22.0	43.8	52.8
100°	0.3	1.3	14.0	31.8	39.5
102.5°	0.5	0.8	8.8	22.8	29.0
105°	0.5	0.8	5.3	15.5	20.8
107.5°	0.5	0.8	3.0	10.5	14.3
110°	0.8	0.8	1.8	6.5	9.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	0.8	1.0	4.3	6.3
115°	0.8	0.8	1.0	2.8	4.0
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)