

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: P517777

Luminaire Tested: HVL8-1-LD4-2HI-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: P517777
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2HI-35-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1701.0 lumens
Efficiency: N/A
Efficacy: 79.1 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

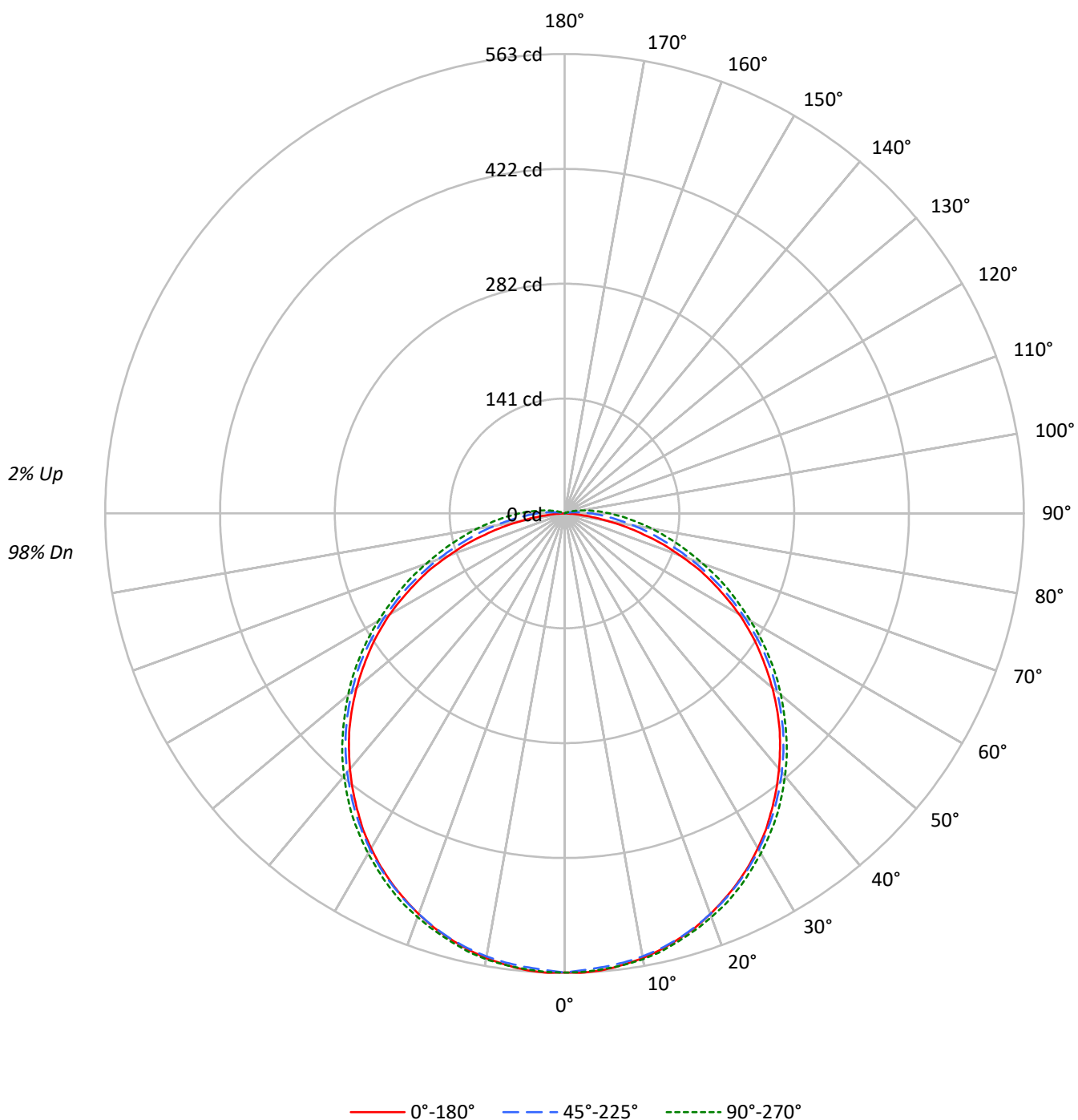
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	9084	9084	9084
5°	8968	8813	8890
10°	8812	8592	8712
15°	8640	8358	8497
20°	8464	8106	8290
25°	8272	7852	8079
30°	8061	7586	7840
35°	7819	7300	7602
40°	7564	7003	7324
45°	7294	6684	7025
50°	6968	6326	6703
55°	6612	5938	6349
60°	6202	5456	5935
65°	5626	4923	5523
70°	4870	4315	5048
75°	3892	3657	4615
80°	2610	3011	4218
85°	1116	2358	3841

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7294 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	53.2	3.1
10°-20°	152.7	9.0
20°-30°	231.7	13.6
30°-40°	280.2	16.5
40°-50°	292.3	17.2
50°-60°	267.3	15.7
60°-70°	208.4	12.2
70°-80°	130.3	7.7
80°-90°	59.2	3.5
90°-100°	19.8	1.2
100°-110°	5.0	0.3
110°-120°	0.8	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°	437.7	25.7
0°-40°	717.8	42.2
0°-60°	1277.5	75.1
0°-90°	1675.4	98.5
90°-120°	25.6	1.5
90°-150°	25.6	1.5
90°-180°	26.0	1.5
0°-180°	1701.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	563	563	563	563	563	
5°	561	560	558	560	560	53
15°	540	541	540	543	542	152
25°	500	501	501	506	506	231
35°	443	445	447	451	453	277
45°	373	376	379	383	385	287
55°	291	294	300	304	306	260
65°	200	203	210	219	222	198
75°	101	107	123	138	143	108
85°	18	32	56	74	80	22
90°	0	12	33	49	55	1
95°	0	3	17	31	36	0
105°	0	0	3	8	11	0
115°	0	0	0	2	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	562.6	562.6	562.6	562.6	562.6
2.5°	563.3	562.5	559.9	562.5	562.3
5°	561.4	560.3	557.8	560.5	560.5
7.5°	557.7	557.3	555.0	558.1	558.1
10°	553.3	553.2	551.3	554.6	554.8
12.5°	547.2	547.7	546.0	549.2	549.6
15°	540.0	541.0	539.5	542.6	542.4
17.5°	532.2	532.7	531.7	535.1	535.0
20°	522.5	523.2	522.4	526.0	526.4
22.5°	511.8	512.7	512.6	516.3	517.4
25°	500.4	500.8	501.3	505.6	506.4
27.5°	487.8	488.5	489.4	493.2	494.0
30°	474.0	475.1	476.1	480.1	481.2
32.5°	459.4	460.5	461.8	467.0	467.5
35°	443.0	445.0	446.8	451.3	453.2
37.5°	426.5	429.0	430.8	435.5	437.0
40°	409.1	411.7	414.4	419.5	420.4
42.5°	391.0	393.9	397.2	401.7	403.3
45°	372.7	376.0	379.0	382.8	384.6
47.5°	352.9	356.2	359.9	364.2	365.4
50°	332.5	336.3	340.3	344.3	346.4
52.5°	311.5	316.2	320.7	324.9	326.9
55°	290.8	294.3	299.7	304.1	306.1
57.5°	269.4	272.3	277.2	284.3	285.4
60°	247.5	250.1	255.2	261.0	263.4
62.5°	223.3	226.9	232.2	239.7	241.8
65°	199.9	203.3	210.3	218.7	222.1
67.5°	177.2	178.4	187.4	196.1	201.7
70°	150.4	154.9	165.4	176.1	180.4
72.5°	127.3	131.8	143.4	156.0	161.3
75°	101.2	107.4	123.1	137.8	143.0
77.5°	78.2	85.1	104.5	119.4	125.3
80°	54.6	65.4	86.5	103.2	109.7
82.5°	34.3	47.6	70.2	87.7	93.4
85°	17.5	32.4	55.6	73.5	80.0
87.5°	4.6	21.0	43.2	60.3	67.0
90°	0.1	12.1	32.8	49.2	55.2
92.5°	0.1	6.8	24.4	39.1	45.2
95°	0.1	3.2	17.0	30.8	35.5
97.5°	0.1	1.3	11.7	23.2	28.0
100°	0.1	0.7	7.4	16.8	21.0
102.5°	0.3	0.4	4.6	12.1	15.4
105°	0.3	0.4	2.8	8.2	11.0
107.5°	0.3	0.4	1.6	5.6	7.6
110°	0.4	0.4	0.9	3.4	5.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.4	0.5	2.3	3.3
115°	0.4	0.4	0.5	1.5	2.1
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)