

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: P517950

Luminaire Tested: HVL8-2-LD4-2STD-30-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: P517950
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2STD-30-UNV-O-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2609.0 lumens
Efficiency: N/A
Efficacy: 79.8 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

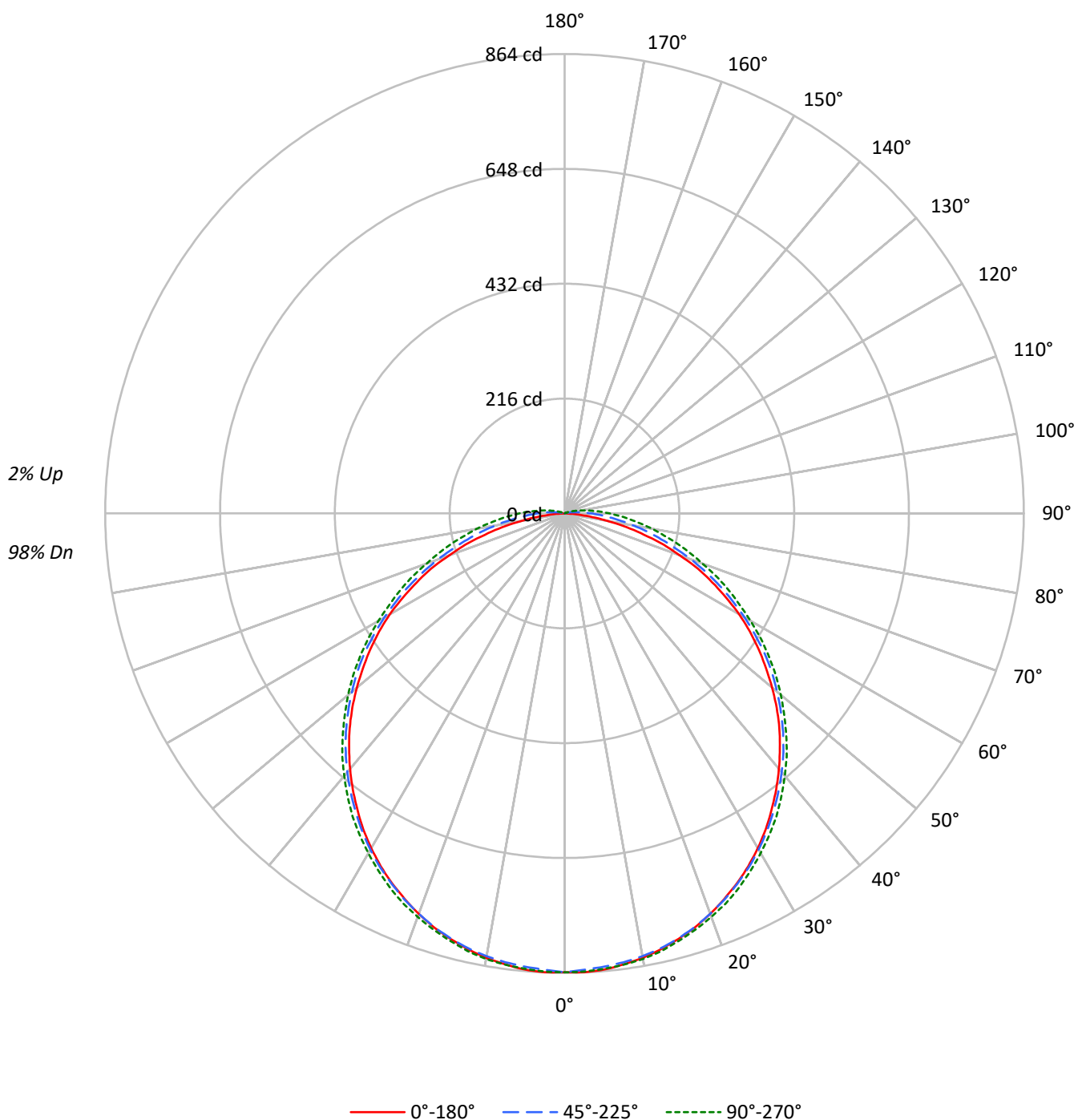
Input Watts (W): 32.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	6966	6966	6966
5°	6928	6793	6817
10°	6856	6655	6681
15°	6771	6505	6517
20°	6683	6340	6358
25°	6581	6171	6196
30°	6466	5992	6012
35°	6326	5797	5830
40°	6181	5593	5617
45°	6024	5371	5388
50°	5826	5118	5141
55°	5611	4840	4869
60°	5356	4487	4552
65°	4969	4093	4236
70°	4431	3634	3870
75°	3692	3133	3538
80°	2645	2638	3234
85°	1276	2136	2946

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 6024 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.7	3.1
10°-20°	234.2	9.0
20°-30°	355.4	13.6
30°-40°	429.7	16.5
40°-50°	448.4	17.2
50°-60°	410.0	15.7
60°-70°	319.6	12.2
70°-80°	199.9	7.7
80°-90°	90.8	3.5
90°-100°	30.4	1.2
100°-110°	7.6	0.3
110°-120°	1.2	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°	671.3	25.7
0°-40°	1101.0	42.2
0°-60°	1959.4	75.1
0°-90°	2569.7	98.5
90°-120°	39.3	1.5
90°-150°	39.3	1.5
90°-180°	39.0	1.5
0°-180°	2609.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	863	863	863	863	863	
5°	861	859	856	860	860	82
15°	828	830	828	832	832	234
25°	768	768	769	775	777	354
35°	679	682	685	692	695	425
45°	572	577	581	587	590	440
55°	446	451	460	466	470	399
65°	307	312	323	335	341	303
75°	155	165	189	211	219	165
85°	27	50	85	113	123	34
90°	0	18	50	76	85	1
95°	0	5	26	47	54	0
105°	0	1	4	13	17	0
115°	1	1	1	2	3	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°	862.9	862.9	862.9	862.9	862.9
2.5°	863.9	862.7	858.8	862.7	862.5
5°	861.1	859.4	855.6	859.6	859.6
7.5°	855.4	854.8	851.3	856.0	856.0
10°	848.7	848.5	845.6	850.7	850.9
12.5°	839.3	840.1	837.5	842.4	843.0
15°	828.3	829.7	827.5	832.2	832.0
17.5°	816.3	817.1	815.5	820.8	820.6
20°	801.5	802.5	801.3	806.8	807.4
22.5°	785.0	786.4	786.2	791.9	793.5
25°	767.5	768.1	768.9	775.4	776.7
27.5°	748.2	749.2	750.6	756.5	757.7
30°	727.0	728.6	730.3	736.4	738.0
32.5°	704.6	706.3	708.3	716.2	717.0
35°	679.4	682.5	685.3	692.2	695.1
37.5°	654.2	658.1	660.7	668.0	670.3
40°	627.5	631.4	635.7	643.4	644.8
42.5°	599.7	604.2	609.2	616.2	618.6
45°	571.6	576.7	581.4	587.1	589.9
47.5°	541.3	546.4	552.1	558.6	560.4
50°	510.0	515.9	522.0	528.1	531.3
52.5°	477.8	484.9	491.9	498.4	501.4
55°	446.1	451.4	459.7	466.4	469.5
57.5°	413.1	417.6	425.1	436.1	437.8
60°	379.6	383.6	391.4	400.3	404.0
62.5°	342.6	348.0	356.2	367.6	370.8
65°	306.6	311.8	322.6	335.4	340.7
67.5°	271.8	273.6	287.4	300.9	309.4
70°	230.7	237.6	253.7	270.1	276.6
72.5°	195.3	202.2	219.9	239.2	247.4
75°	155.2	164.8	188.8	211.4	219.3
77.5°	120.0	130.6	160.3	183.1	192.2
80°	83.8	100.3	132.6	158.3	168.2
82.5°	52.7	73.0	107.6	134.5	143.2
85°	26.9	49.6	85.2	112.7	122.7
87.5°	7.1	32.1	66.3	92.6	102.7
90°	0.2	18.5	50.2	75.5	84.6
92.5°	0.2	10.4	37.4	60.0	69.4
95°	0.2	4.9	26.0	47.2	54.5
97.5°	0.2	2.0	17.9	35.6	42.9
100°	0.2	1.0	11.4	25.8	32.1
102.5°	0.4	0.6	7.1	18.5	23.6
105°	0.4	0.6	4.3	12.6	16.9
107.5°	0.4	0.6	2.4	8.5	11.6
110°	0.6	0.6	1.4	5.3	7.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	0.6	0.8	3.5	5.1
115°	0.6	0.6	0.8	2.2	3.3
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)