

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: P517956

Luminaire Tested: HVL8-2-LD4-2STD-40-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: P517956
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2STD-40-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3525.0 lumens
Efficiency: N/A
Efficacy: 107.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

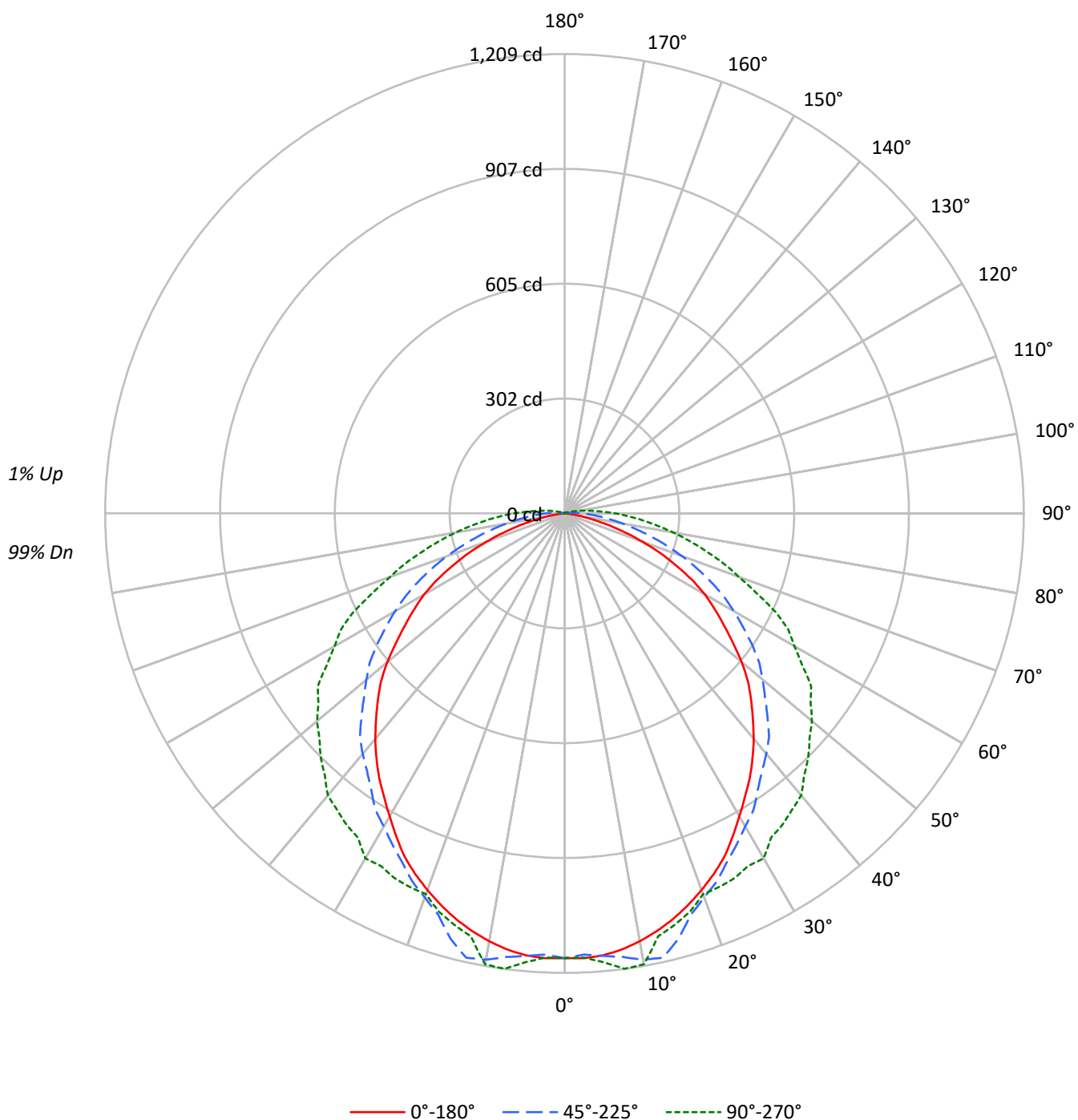
Input Watts (W): 32.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	9446	9446	9446
5°	9390	9281	9401
10°	9233	9384	9458
15°	9032	9106	8779
20°	8794	8509	8396
25°	8545	8120	8448
30°	8185	7804	8541
35°	7917	7502	8390
40°	7630	7271	8443
45°	7322	6979	8290
50°	6955	6672	8226
55°	6437	6345	8222
60°	6020	5905	7871
65°	5249	5386	7620
70°	4202	4723	6833
75°	2914	3927	6238
80°	1556	3129	5600
85°	522	2312	4934

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8290 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	112.5	3.2
10°-20°	320.3	9.1
20°-30°	476.5	13.5
30°-40°	572.8	16.2
40°-50°	602.9	17.1
50°-60°	559.4	15.9
60°-70°	442.3	12.5
70°-80°	270.2	7.7
80°-90°	117.7	3.3
90°-100°	36.6	1.0
100°-110°	8.2	0.2
110°-120°	3.3	0.1
120°-130°	1.9	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°	909.2	25.8
0°-40°	1482.0	42.0
0°-60°	2644.3	75.0
0°-90°	3474.4	98.6
90°-120°	48.2	1.4
90°-150°	50.6	1.4
90°-180°	51.0	1.4
0°-180°	3525.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1170	1170	1170	1170	1170	
5°	1167	1165	1169	1182	1185	111
15°	1105	1147	1158	1120	1121	311
25°	997	1060	1012	1042	1059	458
35°	850	874	887	968	1000	531
45°	695	698	755	875	908	536
55°	512	520	603	734	793	460
65°	324	334	424	562	613	321
75°	122	162	237	364	387	134
85°	11	38	92	179	206	17
90°	0	11	48	114	134	1
95°	0	3	21	62	76	0
105°	0	2	4	12	17	0
115°	0	1	3	6	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°	1170.1	1170.1	1170.1	1170.1	1170.1
2.5°	1171.5	1168.4	1162.0	1168.2	1169.9
5°	1167.2	1164.9	1168.9	1182.0	1185.4
7.5°	1157.5	1166.5	1177.3	1201.1	1208.7
10°	1142.9	1160.1	1192.3	1212.5	1204.7
12.5°	1125.3	1154.4	1197.5	1158.0	1139.6
15°	1104.8	1147.2	1158.4	1120.1	1120.8
17.5°	1080.7	1141.3	1106.7	1105.8	1098.8
20°	1054.7	1121.2	1075.5	1073.6	1066.2
22.5°	1026.9	1094.8	1047.8	1044.0	1064.0
25°	996.6	1060.2	1011.8	1042.1	1059.0
27.5°	958.7	1014.9	981.8	1024.7	1045.9
30°	920.3	968.2	951.1	1010.9	1048.5
32.5°	884.3	919.4	925.8	1005.6	1011.8
35°	850.2	873.8	886.9	967.5	1000.4
37.5°	812.8	819.2	854.0	951.5	983.2
40°	774.7	770.6	826.4	925.3	969.2
42.5°	733.7	732.2	797.1	912.2	934.1
45°	694.8	697.9	755.4	875.0	907.7
47.5°	655.0	659.1	715.8	834.3	874.8
50°	608.8	614.0	680.5	798.0	850.2
52.5°	558.7	568.7	646.2	763.7	816.4
55°	511.8	520.1	602.6	734.4	792.8
57.5°	468.9	473.9	557.5	697.4	741.5
60°	426.7	427.9	515.1	656.4	698.6
62.5°	378.3	380.4	471.5	608.1	664.5
65°	323.9	334.2	424.5	561.8	612.8
67.5°	273.2	291.0	376.6	519.4	546.1
70°	218.8	249.1	329.7	469.6	488.4
72.5°	169.0	204.5	281.5	413.8	440.3
75°	122.5	162.3	236.7	363.7	386.6
77.5°	82.5	123.0	194.7	308.4	338.7
80°	49.3	89.9	157.3	257.2	291.3
82.5°	25.3	60.3	122.0	215.7	246.2
85°	11.0	38.1	92.2	179.0	205.5
87.5°	3.1	21.7	67.9	144.7	167.1
90°	0.2	11.4	48.4	113.5	133.7
92.5°	0.2	5.5	34.1	85.8	101.3
95°	0.2	2.9	21.2	62.2	76.0
97.5°	0.2	1.7	12.9	44.1	55.8
100°	0.2	1.4	7.6	29.3	39.8
102.5°	0.2	1.7	5.2	18.6	26.0
105°	0.2	1.7	4.3	12.2	17.2
107.5°	0.5	1.7	3.8	9.1	11.9
110°	0.2	1.4	4.1	6.9	9.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.2	3.8	5.7	6.9
115°	0.2	1.0	3.3	5.5	5.7
117.5°	0.5	0.7	2.6	5.5	5.7
120°	0.5	0.5	2.1	5.2	6.0
122.5°	0.5	0.5	1.7	4.8	5.7
125°	0.2	0.5	1.4	3.6	5.0
127.5°	0.5	0.5	1.2	2.9	3.8
130°	0.5	0.5	1.0	2.1	2.9
132.5°	0.5	0.5	0.7	1.7	2.1
135°	0.5	0.5	0.5	1.2	1.7
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)