

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: P517715

Luminaire Tested: HVL12-8-LD4-3STD-40-UNV-C-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: P517715
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3STD-40-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 23213.9 lumens
Efficiency: N/A
Efficacy: 118.3 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

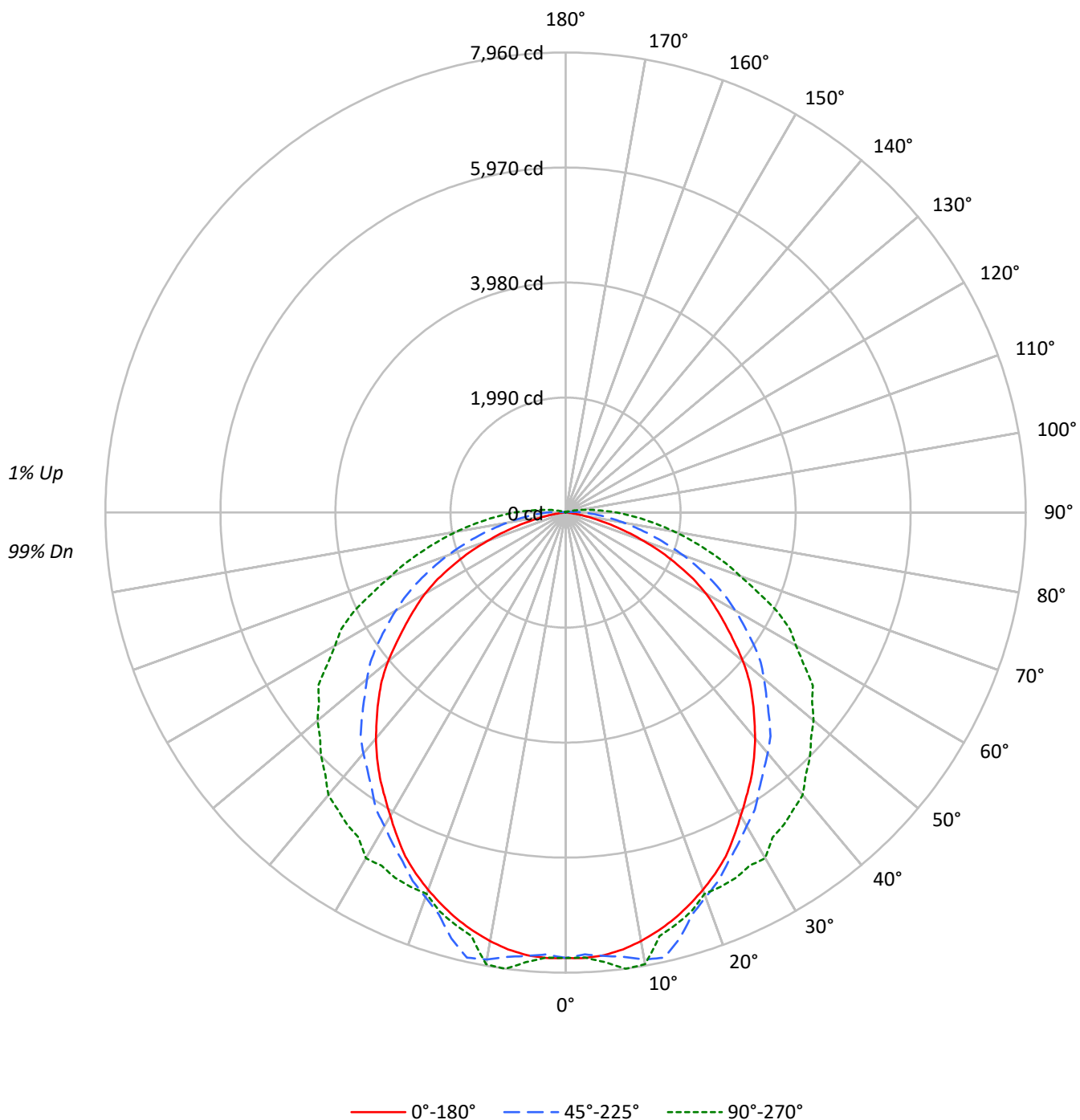
Input Watts (W): 196.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10368	10368	10368
5°	10363	10278	10392
10°	10246	10482	10529
15°	10078	10262	9842
20°	9871	9674	9478
25°	9650	9316	9607
30°	9304	9039	9786
35°	9065	8779	9690
40°	8807	8602	9835
45°	8529	8357	9749
50°	8189	8101	9778
55°	7677	7827	9892
60°	7298	7423	9607
65°	6501	6930	9465
70°	5362	6260	8678
75°	3892	5420	8160
80°	2251	4582	7640
85°	900	3728	7190

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 9892 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	740.6	3.2
10°-20°	2109.1	9.1
20°-30°	3138.1	13.5
30°-40°	3772.0	16.2
40°-50°	3970.2	17.1
50°-60°	3683.9	15.9
60°-70°	2912.8	12.5
70°-80°	1779.2	7.7
80°-90°	775.2	3.3
90°-100°	241.3	1.0
100°-110°	54.2	0.2
110°-120°	21.8	0.1
120°-130°	12.2	0.1
130°-140°	3.3	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°	5987.8	25.8
0°-40°	9759.7	42.0
0°-60°	17413.9	75.0
0°-90°	22881.1	98.6
90°-120°	317.3	1.4
90°-150°	332.9	1.4
90°-180°	333.0	1.4
0°-180°	23213.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7706	7706	7706	7706	7706	
5°	7687	7671	7698	7784	7806	729
15°	7276	7555	7629	7376	7381	2050
25°	6563	6982	6664	6863	6974	3013
35°	5599	5755	5841	6372	6588	3499
45°	4576	4596	4974	5762	5978	3527
55°	3370	3425	3968	4836	5221	3028
65°	2133	2201	2796	3700	4036	2113
75°	807	1069	1559	2395	2546	881
85°	72	251	608	1179	1353	112
90°	2	75	319	747	881	3
95°	2	19	140	410	501	1
105°	2	11	28	80	113	2
115°	2	6	22	36	38	3
125°	2	3	9	24	33	2
135°	3	3	3	8	11	2
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°	7705.8	7705.8	7705.8	7705.8	7705.8
2.5°	7715.2	7694.8	7652.4	7693.2	7704.2
5°	7686.9	7671.3	7697.9	7784.3	7806.2
7.5°	7622.6	7682.2	7752.9	7909.8	7960.1
10°	7526.8	7639.9	7851.8	7985.2	7933.4
12.5°	7410.7	7602.2	7886.3	7625.7	7504.9
15°	7275.7	7555.1	7628.9	7376.1	7380.9
17.5°	7117.1	7515.8	7288.2	7282.0	7236.4
20°	6946.0	7384.0	7082.6	7070.0	7021.4
22.5°	6762.4	7209.8	6900.5	6875.4	7007.3
25°	6563.0	6982.1	6663.5	6862.8	6974.3
27.5°	6313.4	6683.9	6465.7	6748.3	6888.0
30°	6060.7	6376.2	6263.2	6657.2	6905.2
32.5°	5823.7	6054.4	6096.8	6622.7	6663.5
35°	5599.2	5754.6	5841.0	6371.5	6588.1
37.5°	5352.8	5395.1	5624.3	6266.3	6475.1
40°	5101.6	5074.9	5442.2	6093.7	6382.5
42.5°	4831.6	4822.2	5249.2	6007.3	6151.8
45°	4575.8	4596.2	4974.5	5762.5	5977.5
47.5°	4313.6	4340.3	4713.9	5494.0	5760.9
50°	4009.1	4043.6	4481.6	5255.4	5599.2
52.5°	3679.4	3745.4	4255.5	5029.4	5376.3
55°	3370.2	3425.1	3968.3	4836.3	5220.9
57.5°	3087.7	3120.6	3671.6	4593.0	4883.4
60°	2809.8	2817.7	3392.2	4323.0	4600.9
62.5°	2491.2	2505.3	3104.9	4004.4	4376.4
65°	2133.3	2200.8	2795.7	3699.8	4035.8
67.5°	1798.9	1916.6	2480.2	3420.4	3596.2
70°	1441.0	1640.4	2170.9	3092.4	3216.4
72.5°	1112.9	1346.8	1853.8	2725.0	2899.3
75°	806.8	1069.0	1558.7	2395.4	2546.1
77.5°	543.1	810.0	1282.5	2031.2	2230.6
80°	324.9	591.8	1036.0	1693.7	1918.2
82.5°	166.4	397.1	803.7	1420.6	1621.5
85°	72.2	251.2	607.5	1178.9	1353.1
87.5°	20.4	142.8	447.4	952.8	1100.4
90°	1.6	75.3	318.7	747.2	880.6
92.5°	1.6	36.1	224.5	565.1	667.1
95°	1.6	18.8	139.7	409.7	500.7
97.5°	1.6	11.0	84.8	290.4	367.3
100°	1.6	9.4	50.2	193.1	262.1
102.5°	1.6	11.0	34.5	122.4	171.1
105°	1.6	11.0	28.3	80.1	113.0
107.5°	3.1	11.0	25.1	59.6	78.5
110°	1.6	9.4	26.7	45.5	61.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.1	7.8	25.1	37.7	45.5
115°	1.6	6.3	22.0	36.1	37.7
117.5°	3.1	4.7	17.3	36.1	37.7
120°	3.1	3.1	14.1	34.5	39.2
122.5°	3.1	3.1	11.0	31.4	37.7
125°	1.6	3.1	9.4	23.5	33.0
127.5°	3.1	3.1	7.8	18.8	25.1
130°	3.1	3.1	6.3	14.1	18.8
132.5°	3.1	3.1	4.7	11.0	14.1
135°	3.1	3.1	3.1	7.8	11.0
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)