

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: P517675

Luminaire Tested: HVL12-8-LD4-3HI-30-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: P517675
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3HI-30-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 28181.0 lumens
Efficiency: N/A
Efficacy: 109.0 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

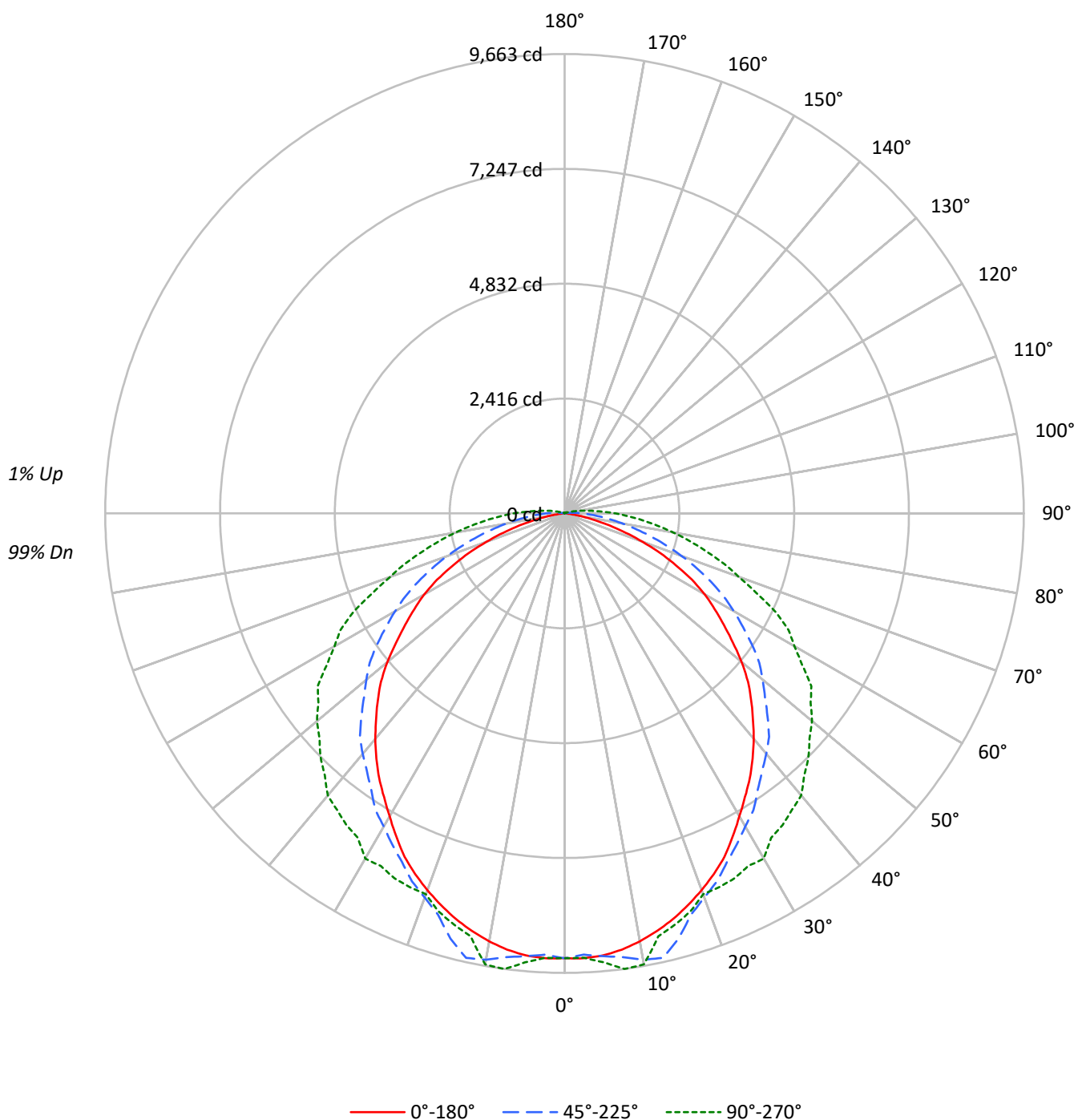
Input Watts (W): 258.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517675

CATALOG NUMBER: HVL12-8-LD4-3HI-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517675

CATALOG NUMBER: HVL12-8-LD4-3HI-30-UNV-C-EDD-90

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°	12587	12587	12587
5°	12581	12477	12615
10°	12438	12725	12782
15°	12235	12458	11947
20°	11983	11744	11506
25°	11714	11310	11663
30°	11295	10973	11880
35°	11004	10657	11764
40°	10691	10442	11939
45°	10354	10145	11835
50°	9941	9834	11870
55°	9320	9501	12009
60°	8859	9012	11663
65°	7892	8413	11490
70°	6509	7599	10535
75°	4725	6581	9906
80°	2734	5562	9275
85°	1093	4526	8728

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 12009 cd/sqm

TEST NUMBER: P517675

CATALOG NUMBER: HVL12-8-LD4-3HI-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	899.1	3.2
10°-20°	2560.4	9.1
20°-30°	3809.5	13.5
30°-40°	4579.0	16.2
40°-50°	4819.7	17.1
50°-60°	4472.2	15.9
60°-70°	3536.0	12.5
70°-80°	2159.9	7.7
80°-90°	941.1	3.3
90°-100°	293.0	1.0
100°-110°	65.8	0.2
110°-120°	26.5	0.1
120°-130°	14.9	0.1
130°-140°	4.0	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°	7269.0	25.8
0°-40°	11848.0	42.0
0°-60°	21139.9	75.0
0°-90°	27776.9	98.6
90°-120°	385.2	1.4
90°-150°	404.1	1.4
90°-180°	404.0	1.4
0°-180°	28181.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	9355	9355	9355	9355	9355	
5°	9332	9313	9345	9450	9476	884
15°	8832	9172	9261	8954	8960	2488
25°	7967	8476	8089	8331	8467	3658
35°	6797	6986	7091	7735	7998	4248
45°	5555	5580	6039	6995	7256	4282
55°	4091	4158	4817	5871	6338	3676
65°	2590	2672	3394	4492	4899	2565
75°	980	1298	1892	2908	3091	1069
85°	88	305	738	1431	1643	136
90°	2	92	387	907	1069	4
95°	2	23	170	497	608	2
105°	2	13	34	97	137	3
115°	2	8	27	44	46	3
125°	2	4	11	29	40	3
135°	4	4	4	10	13	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

TEST NUMBER: P517675

CATALOG NUMBER: HVL12-8-LD4-3HI-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	9354.6	9354.6	9354.6	9354.6	9354.6
2.5°	9366.0	9341.2	9289.8	9339.3	9352.7
5°	9331.7	9312.6	9345.0	9449.8	9476.5
7.5°	9253.6	9326.0	9411.7	9602.3	9663.3
10°	9137.3	9274.5	9531.8	9693.8	9630.9
12.5°	8996.3	9228.8	9573.7	9257.4	9110.6
15°	8832.4	9171.6	9261.2	8954.4	8960.1
17.5°	8640.0	9124.0	8847.7	8840.0	8784.8
20°	8432.3	8963.9	8598.0	8582.8	8523.7
22.5°	8209.3	8752.4	8377.0	8346.5	8506.6
25°	7967.3	8476.1	8089.2	8331.3	8466.6
27.5°	7664.3	8114.0	7849.1	8192.1	8361.7
30°	7357.5	7740.5	7603.3	8081.6	8382.7
32.5°	7069.8	7349.9	7401.3	8039.7	8089.2
35°	6797.3	6985.9	7090.7	7734.8	7997.8
37.5°	6498.1	6549.5	6827.7	7607.1	7860.6
40°	6193.2	6160.8	6606.7	7397.5	7748.1
42.5°	5865.4	5854.0	6372.3	7292.7	7468.0
45°	5554.8	5579.6	6038.8	6995.4	7256.5
47.5°	5236.6	5269.0	5722.5	6669.6	6993.5
50°	4866.9	4908.8	5440.5	6379.9	6797.3
52.5°	4466.7	4546.7	5166.1	6105.5	6526.7
55°	4091.3	4158.0	4817.3	5871.1	6338.0
57.5°	3748.3	3788.3	4457.2	5575.8	5928.3
60°	3411.0	3420.5	4118.0	5248.0	5585.3
62.5°	3024.2	3041.3	3769.3	4861.2	5312.8
65°	2589.7	2671.6	3393.9	4491.5	4899.3
67.5°	2183.8	2326.7	3010.8	4152.3	4365.7
70°	1749.3	1991.3	2635.4	3754.0	3904.6
72.5°	1351.1	1635.0	2250.5	3308.1	3519.6
75°	979.5	1297.7	1892.3	2907.9	3090.9
77.5°	659.3	983.3	1556.9	2465.8	2707.8
80°	394.5	718.4	1257.7	2056.1	2328.6
82.5°	202.0	482.1	975.7	1724.6	1968.5
85°	87.7	304.9	737.5	1431.1	1642.6
87.5°	24.8	173.4	543.1	1156.7	1335.8
90°	1.9	91.5	386.8	907.1	1069.0
92.5°	1.9	43.8	272.5	686.0	809.9
95°	1.9	22.9	169.6	497.4	607.9
97.5°	1.9	13.3	102.9	352.5	445.9
100°	1.9	11.4	61.0	234.4	318.2
102.5°	1.9	13.3	41.9	148.6	207.7
105°	1.9	13.3	34.3	97.2	137.2
107.5°	3.8	13.3	30.5	72.4	95.3
110°	1.9	11.4	32.4	55.3	74.3

TEST NUMBER: P517675

CATALOG NUMBER: HVL12-8-LD4-3HI-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.8	9.5	30.5	45.7	55.3
115°	1.9	7.6	26.7	43.8	45.7
117.5°	3.8	5.7	21.0	43.8	45.7
120°	3.8	3.8	17.2	41.9	47.6
122.5°	3.8	3.8	13.3	38.1	45.7
125°	1.9	3.8	11.4	28.6	40.0
127.5°	3.8	3.8	9.5	22.9	30.5
130°	3.8	3.8	7.6	17.2	22.9
132.5°	3.8	3.8	5.7	13.3	17.2
135°	3.8	3.8	3.8	9.5	13.3
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)