

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: P517200

Luminaire Tested: HVL12-1-LD4-2HI-35-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: P517200
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2HI-35-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2344.0 lumens
Efficiency: N/A
Efficacy: 106.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

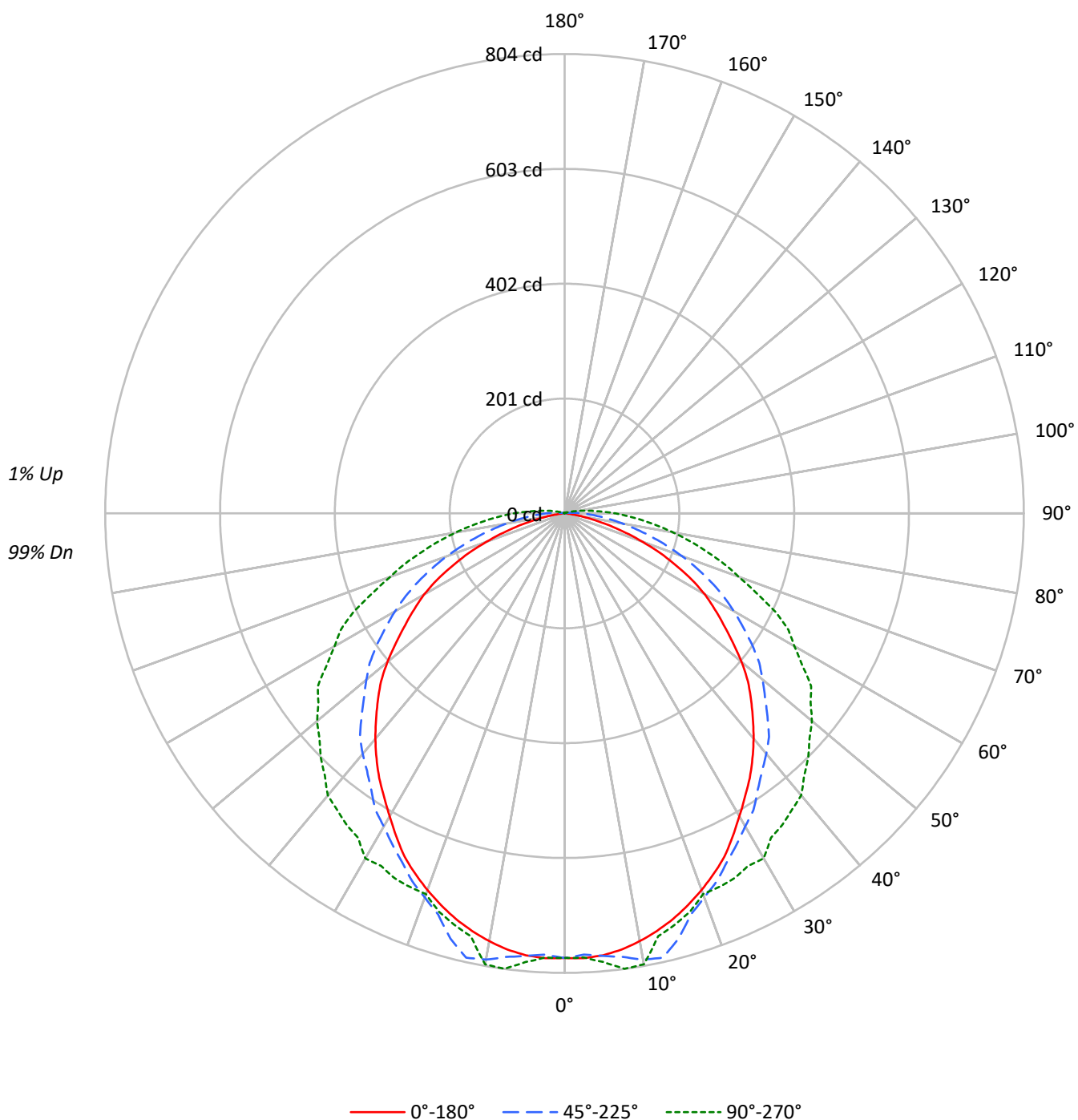
Input Watts (W): 22.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8375	8375	8375
5°	8266	8229	8394
10°	8070	8319	8506
15°	7837	8074	7950
20°	7575	7545	7657
25°	7303	7199	7760
30°	6939	6918	7905
35°	6653	6652	7827
40°	6350	6446	7945
45°	6028	6188	7875
50°	5655	5915	7899
55°	5158	5626	7991
60°	4739	5235	7761
65°	4041	4776	7646
70°	3141	4187	7011
75°	2090	3482	6592
80°	1045	2774	6172
85°	310	2049	5807

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 7991 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.8	3.2
10°-20°	213.0	9.1
20°-30°	316.9	13.5
30°-40°	380.9	16.2
40°-50°	400.9	17.1
50°-60°	372.0	15.9
60°-70°	294.1	12.5
70°-80°	179.7	7.7
80°-90°	78.3	3.3
90°-100°	24.4	1.0
100°-110°	5.5	0.2
110°-120°	2.2	0.1
120°-130°	1.2	0.1
130°-140°	0.3	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°	604.6	25.8
0°-40°	985.5	42.0
0°-60°	1758.3	75.0
0°-90°	2310.4	98.6
90°-120°	32.1	1.4
90°-150°	33.6	1.4
90°-180°	34.0	1.5
0°-180°	2344.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	778	778	778	778	778	
5°	776	775	777	786	788	74
15°	735	763	770	745	745	207
25°	663	705	673	693	704	304
35°	565	581	590	643	665	353
45°	462	464	502	582	604	356
55°	340	346	401	488	527	306
65°	215	222	282	374	408	213
75°	82	108	157	242	257	89
85°	7	25	61	119	137	11
90°	0	8	32	75	89	0
95°	0	2	14	41	51	0
105°	0	1	3	8	11	0
115°	0	1	2	4	4	0
125°	0	0	1	2	3	0
135°	0	0	0	1	1	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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CATALOG NUMBER: HVL12-1-LD4-2HI-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	778.1	778.1	778.1	778.1	778.1
2.5°	779.0	777.0	772.7	776.8	777.9
5°	776.2	774.6	777.3	786.0	788.2
7.5°	769.7	775.7	782.8	798.7	803.8
10°	760.0	771.4	792.8	806.3	801.1
12.5°	748.3	767.6	796.3	770.0	757.8
15°	734.7	762.9	770.3	744.8	745.3
17.5°	718.6	758.9	735.9	735.3	730.7
20°	701.4	745.6	715.2	713.9	709.0
22.5°	682.8	728.0	696.8	694.2	707.5
25°	662.7	705.0	672.8	693.0	704.2
27.5°	637.5	674.9	652.9	681.4	695.5
30°	612.0	643.8	632.4	672.2	697.2
32.5°	588.0	611.3	615.6	668.7	672.8
35°	565.4	581.1	589.8	643.4	665.2
37.5°	540.5	544.8	567.9	632.7	653.8
40°	515.1	512.4	549.5	615.3	644.5
42.5°	487.9	486.9	530.0	606.6	621.2
45°	462.0	464.1	502.3	581.9	603.6
47.5°	435.6	438.3	476.0	554.8	581.7
50°	404.8	408.3	452.5	530.7	565.4
52.5°	371.5	378.2	429.7	507.8	542.9
55°	340.3	345.8	400.7	488.3	527.2
57.5°	311.8	315.1	370.7	463.8	493.1
60°	283.7	284.5	342.5	436.5	464.6
62.5°	251.5	253.0	313.5	404.3	441.9
65°	215.4	222.2	282.3	373.6	407.5
67.5°	181.6	193.5	250.4	345.4	363.1
70°	145.5	165.6	219.2	312.2	324.8
72.5°	112.4	136.0	187.2	275.2	292.8
75°	81.5	107.9	157.4	241.9	257.1
77.5°	54.8	81.8	129.5	205.1	225.2
80°	32.8	59.8	104.6	171.0	193.7
82.5°	16.8	40.1	81.2	143.4	163.7
85°	7.3	25.4	61.3	119.0	136.6
87.5°	2.1	14.4	45.2	96.2	111.1
90°	0.2	7.6	32.2	75.4	88.9
92.5°	0.2	3.6	22.7	57.1	67.4
95°	0.2	1.9	14.1	41.4	50.6
97.5°	0.2	1.1	8.6	29.3	37.1
100°	0.2	1.0	5.1	19.5	26.5
102.5°	0.2	1.1	3.5	12.4	17.3
105°	0.2	1.1	2.9	8.1	11.4
107.5°	0.3	1.1	2.5	6.0	7.9
110°	0.2	1.0	2.7	4.6	6.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.5	3.8	4.6
115°	0.2	0.6	2.2	3.6	3.8
117.5°	0.3	0.5	1.7	3.6	3.8
120°	0.3	0.3	1.4	3.5	4.0
122.5°	0.3	0.3	1.1	3.2	3.8
125°	0.2	0.3	1.0	2.4	3.3
127.5°	0.3	0.3	0.8	1.9	2.5
130°	0.3	0.3	0.6	1.4	1.9
132.5°	0.3	0.3	0.5	1.1	1.4
135°	0.3	0.3	0.3	0.8	1.1
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)