

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: P517232

Luminaire Tested: HVL12-1-LD4-2STD-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: P517232
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-2STD-35-UNV-C-EDD
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

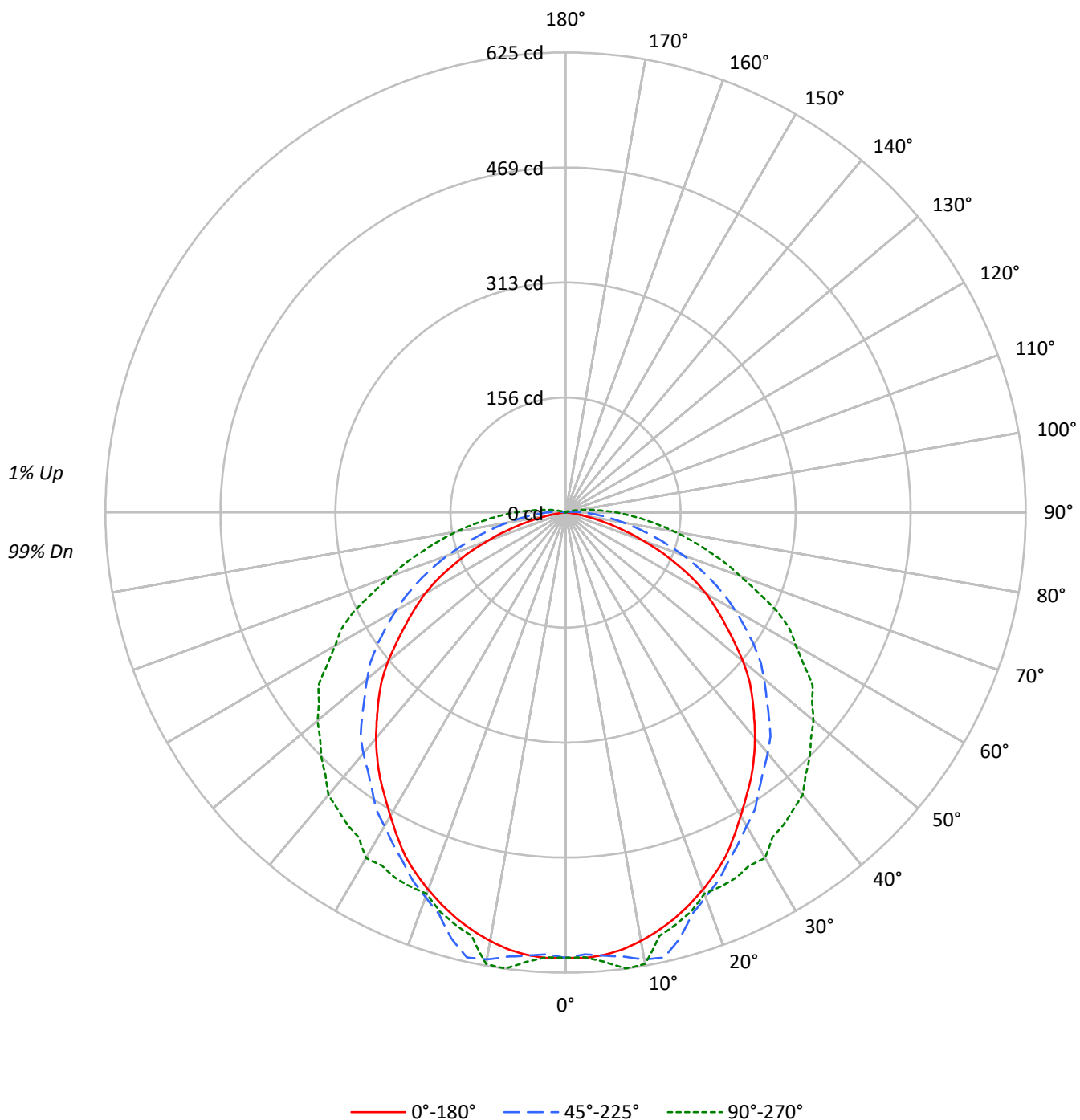
Lumens per Lamp: N/A
Luminaire Lumens: 1822.0 lumens
Efficiency: N/A
Efficacy: 108.5 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

Input Watts (W): 16.8
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°	6510	6510	6510
5°	6425	6396	6525
10°	6273	6467	6612
15°	6091	6276	6179
20°	5888	5864	5952
25°	5676	5596	6032
30°	5393	5378	6145
35°	5172	5170	6085
40°	4936	5010	6175
45°	4685	4809	6122
50°	4396	4598	6140
55°	4009	4373	6212
60°	3683	4069	6032
65°	3141	3712	5944
70°	2441	3255	5448
75°	1623	2706	5123
80°	813	2156	4799
85°	242	1594	4514

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 6212 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.1	3.2
10°-20°	165.5	9.1
20°-30°	246.3	13.5
30°-40°	296.0	16.2
40°-50°	311.6	17.1
50°-60°	289.1	15.9
60°-70°	228.6	12.5
70°-80°	139.6	7.7
80°-90°	60.8	3.3
90°-100°	18.9	1.0
100°-110°	4.3	0.2
110°-120°	1.7	0.1
120°-130°	0.9	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°	470.0	25.8
0°-40°	766.0	42.0
0°-60°	1366.8	75.0
0°-90°	1795.9	98.6
90°-120°	24.9	1.4
90°-150°	26.1	1.4
90°-180°	26.0	1.4
0°-180°	1822.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	605	605	605	605	605	
5°	603	602	604	611	613	57
15°	571	593	599	579	579	161
25°	515	548	523	539	547	236
35°	440	452	458	500	517	275
45°	359	361	390	452	469	277
55°	264	269	312	380	410	238
65°	167	173	219	290	317	166
75°	63	84	122	188	200	69
85°	6	20	48	92	106	9
90°	0	6	25	59	69	0
95°	0	2	11	32	39	0
105°	0	1	2	6	9	0
115°	0	0	2	3	3	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	604.8	604.8	604.8	604.8	604.8
2.5°	605.5	603.9	600.6	603.8	604.7
5°	603.3	602.1	604.2	611.0	612.7
7.5°	598.3	603.0	608.5	620.8	624.8
10°	590.8	599.6	616.3	626.7	622.7
12.5°	581.6	596.7	619.0	598.5	589.0
15°	571.0	593.0	598.8	578.9	579.3
17.5°	558.6	589.9	572.0	571.5	568.0
20°	545.2	579.5	555.9	554.9	551.1
22.5°	530.8	565.9	541.6	539.6	550.0
25°	515.1	548.0	523.0	538.6	547.4
27.5°	495.5	524.6	507.5	529.7	540.6
30°	475.7	500.5	491.6	522.5	542.0
32.5°	457.1	475.2	478.5	519.8	523.0
35°	439.5	451.7	458.4	500.1	517.1
37.5°	420.1	423.4	441.4	491.8	508.2
40°	400.4	398.3	427.1	478.3	500.9
42.5°	379.2	378.5	412.0	471.5	482.8
45°	359.1	360.7	390.4	452.3	469.2
47.5°	338.6	340.7	370.0	431.2	452.2
50°	314.7	317.4	351.7	412.5	439.5
52.5°	288.8	294.0	334.0	394.7	422.0
55°	264.5	268.8	311.5	379.6	409.8
57.5°	242.3	244.9	288.2	360.5	383.3
60°	220.5	221.1	266.2	339.3	361.1
62.5°	195.5	196.6	243.7	314.3	343.5
65°	167.4	172.7	219.4	290.4	316.8
67.5°	141.2	150.4	194.7	268.5	282.3
70°	113.1	128.7	170.4	242.7	252.4
72.5°	87.4	105.7	145.5	213.9	227.6
75°	63.3	83.9	122.3	188.0	199.8
77.5°	42.6	63.6	100.7	159.4	175.1
80°	25.5	46.4	81.3	132.9	150.6
82.5°	13.1	31.2	63.1	111.5	127.3
85°	5.7	19.7	47.7	92.5	106.2
87.5°	1.6	11.2	35.1	74.8	86.4
90°	0.1	5.9	25.0	58.6	69.1
92.5°	0.1	2.8	17.6	44.4	52.4
95°	0.1	1.5	11.0	32.2	39.3
97.5°	0.1	0.9	6.7	22.8	28.8
100°	0.1	0.7	3.9	15.2	20.6
102.5°	0.1	0.9	2.7	9.6	13.4
105°	0.1	0.9	2.2	6.3	8.9
107.5°	0.2	0.9	2.0	4.7	6.2
110°	0.1	0.7	2.1	3.6	4.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.6	2.0	3.0	3.6
115°	0.1	0.5	1.7	2.8	3.0
117.5°	0.2	0.4	1.4	2.8	3.0
120°	0.2	0.2	1.1	2.7	3.1
122.5°	0.2	0.2	0.9	2.5	3.0
125°	0.1	0.2	0.7	1.8	2.6
127.5°	0.2	0.2	0.6	1.5	2.0
130°	0.2	0.2	0.5	1.1	1.5
132.5°	0.2	0.2	0.4	0.9	1.1
135°	0.2	0.2	0.2	0.6	0.9
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)