

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: P517936

Luminaire Tested: HVL8-2-LD4-2LO-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: P517936
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2LO-35-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2709.0 lumens
Efficiency: N/A
Efficacy: 117.3 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

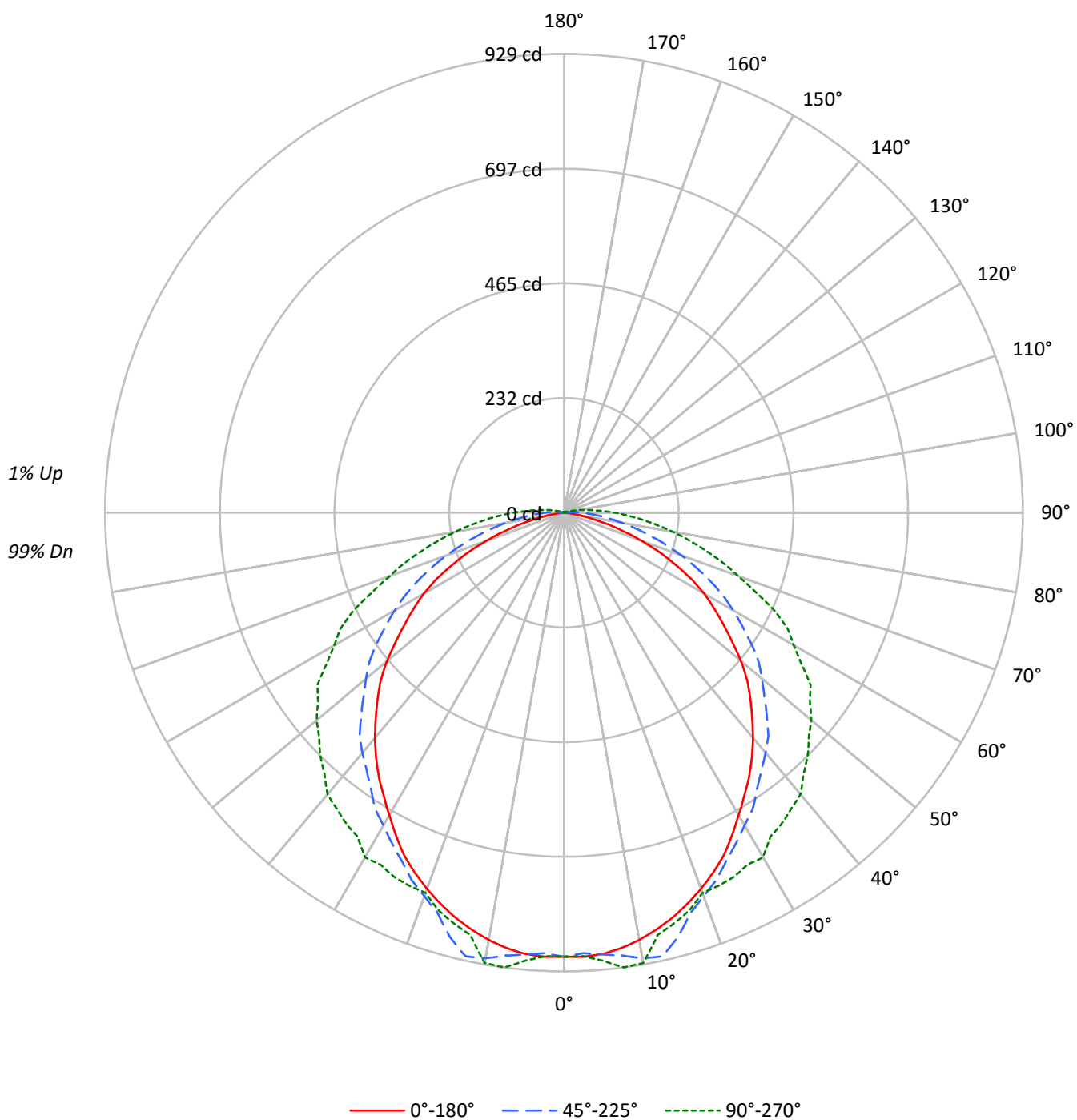
Input Watts (W): 23.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	7259	7259	7259
5°	7216	7133	7224
10°	7096	7212	7269
15°	6941	6999	6746
20°	6759	6539	6452
25°	6567	6240	6493
30°	6291	5997	6564
35°	6084	5766	6448
40°	5863	5588	6488
45°	5628	5363	6371
50°	5344	5128	6322
55°	4947	4876	6319
60°	4626	4539	6049
65°	4034	4139	5857
70°	3230	3629	5251
75°	2241	3018	4794
80°	1196	2405	4303
85°	398	1778	3791

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6371 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.4	3.2
10°-20°	246.1	9.1
20°-30°	366.2	13.5
30°-40°	440.2	16.2
40°-50°	463.3	17.1
50°-60°	429.9	15.9
60°-70°	339.9	12.5
70°-80°	207.6	7.7
80°-90°	90.5	3.3
90°-100°	28.2	1.0
100°-110°	6.3	0.2
110°-120°	2.5	0.1
120°-130°	1.4	0.1
130°-140°	0.4	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°	698.8	25.8
0°-40°	1138.9	42.0
0°-60°	2032.2	75.0
0°-90°	2670.2	98.6
90°-120°	37.0	1.4
90°-150°	38.9	1.4
90°-180°	39.0	1.4
0°-180°	2709.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	899	899	899	899	899	
5°	897	895	898	908	911	85
15°	849	882	890	861	861	239
25°	766	815	778	801	814	352
35°	653	672	682	744	769	408
45°	534	536	580	672	698	412
55°	393	400	463	564	609	353
65°	249	257	326	432	471	247
75°	94	125	182	280	297	103
85°	8	29	71	138	158	13
90°	0	9	37	87	103	0
95°	0	2	16	48	58	0
105°	0	1	3	9	13	0
115°	0	1	3	4	4	0
125°	0	0	1	3	4	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: HVL8-2-LD4-2LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	899.2	899.2	899.2	899.2	899.2
2.5°	900.3	898.0	893.0	897.8	899.1
5°	897.0	895.2	898.3	908.4	911.0
7.5°	889.5	896.5	904.7	923.1	928.9
10°	878.4	891.5	916.3	931.8	925.8
12.5°	864.8	887.2	920.3	889.9	875.8
15°	849.0	881.7	890.3	860.8	861.3
17.5°	830.5	877.1	850.5	849.8	844.5
20°	810.6	861.7	826.5	825.1	819.4
22.5°	789.1	841.4	805.3	802.3	817.7
25°	765.9	814.8	777.6	800.9	813.9
27.5°	736.8	780.0	754.5	787.5	803.8
30°	707.3	744.1	730.9	776.9	805.8
32.5°	679.6	706.5	711.5	772.8	777.6
35°	653.4	671.5	681.6	743.5	768.8
37.5°	624.7	629.6	656.3	731.3	755.6
40°	595.3	592.2	635.1	711.1	744.8
42.5°	563.8	562.7	612.6	701.0	717.9
45°	534.0	536.4	580.5	672.5	697.6
47.5°	503.4	506.5	550.1	641.1	672.3
50°	467.8	471.9	523.0	613.3	653.4
52.5°	429.4	437.1	496.6	586.9	627.4
55°	393.3	399.7	463.1	564.4	609.3
57.5°	360.3	364.2	428.5	536.0	569.9
60°	327.9	328.8	395.9	504.5	536.9
62.5°	290.7	292.4	362.3	467.3	510.7
65°	248.9	256.8	326.2	431.8	471.0
67.5°	209.9	223.7	289.4	399.2	419.7
70°	168.2	191.4	253.3	360.9	375.3
72.5°	129.9	157.2	216.3	318.0	338.3
75°	94.2	124.7	181.9	279.5	297.1
77.5°	63.4	94.5	149.7	237.0	260.3
80°	37.9	69.1	120.9	197.7	223.8
82.5°	19.4	46.3	93.8	165.8	189.2
85°	8.4	29.3	70.9	137.6	157.9
87.5°	2.4	16.7	52.2	111.2	128.4
90°	0.2	8.8	37.2	87.2	102.8
92.5°	0.2	4.2	26.2	65.9	77.9
95°	0.2	2.2	16.3	47.8	58.4
97.5°	0.2	1.3	9.9	33.9	42.9
100°	0.2	1.1	5.9	22.5	30.6
102.5°	0.2	1.3	4.0	14.3	20.0
105°	0.2	1.3	3.3	9.3	13.2
107.5°	0.4	1.3	2.9	7.0	9.2
110°	0.2	1.1	3.1	5.3	7.1

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CATALOG NUMBER: HVL8-2-LD4-2LO-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.9	2.9	4.4	5.3
115°	0.2	0.7	2.6	4.2	4.4
117.5°	0.4	0.5	2.0	4.2	4.4
120°	0.4	0.4	1.6	4.0	4.6
122.5°	0.4	0.4	1.3	3.7	4.4
125°	0.2	0.4	1.1	2.7	3.8
127.5°	0.4	0.4	0.9	2.2	2.9
130°	0.4	0.4	0.7	1.6	2.2
132.5°	0.4	0.4	0.5	1.3	1.6
135°	0.4	0.4	0.4	0.9	1.3
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)