

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: P517990

Luminaire Tested: HVL8-2-LD4-3LO-40-UNV-O-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: P517990
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3LO-40-UNV-O-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3283.0 lumens
Efficiency: N/A
Efficacy: 97.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

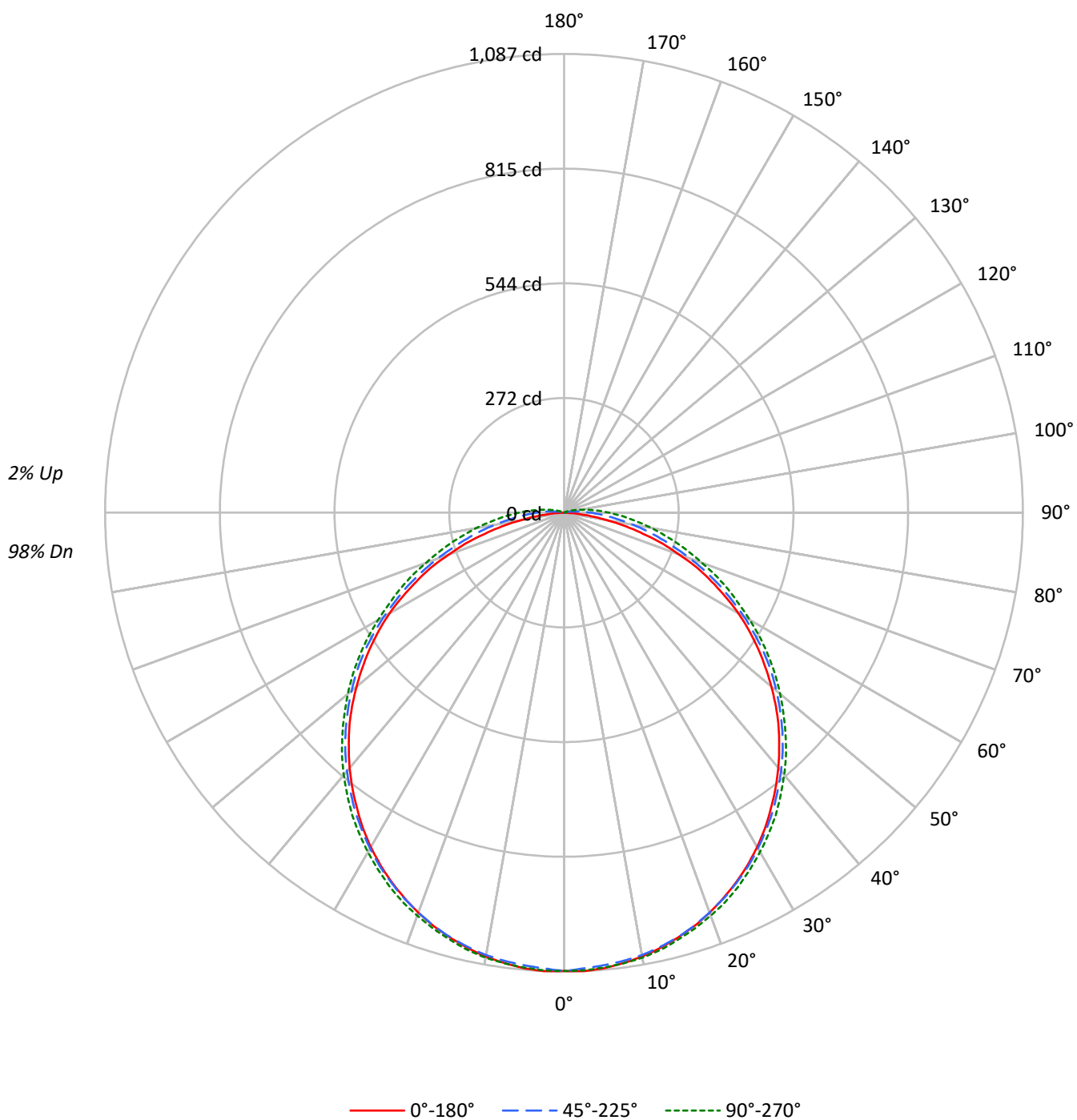
Input Watts (W): 33.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517990

CATALOG NUMBER: HVL8-2-LD4-3LO-40-UNV-O-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517990

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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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	8766	8766	8766
5°	8717	8548	8578
10°	8627	8375	8406
15°	8521	8186	8200
20°	8409	7978	8000
25°	8281	7765	7796
30°	8136	7540	7565
35°	7961	7295	7335
40°	7778	7038	7068
45°	7580	6759	6780
50°	7331	6440	6469
55°	7060	6091	6127
60°	6738	5646	5728
65°	6250	5151	5331
70°	5575	4573	4870
75°	4646	3941	4452
80°	3330	3320	4070
85°	1603	2690	3705

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7580 cd/sqm

TEST NUMBER: P517990

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.8	3.1
10°-20°	294.7	9.0
20°-30°	447.2	13.6
30°-40°	540.8	16.5
40°-50°	564.2	17.2
50°-60°	515.9	15.7
60°-70°	402.2	12.2
70°-80°	251.6	7.7
80°-90°	114.3	3.5
90°-100°	38.3	1.2
100°-110°	9.6	0.3
110°-120°	1.5	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	844.7	25.7
0°-40°	1385.5	42.2
0°-60°	2465.6	75.1
0°-90°	3233.6	98.5
90°-120°	49.5	1.5
90°-150°	49.5	1.5
90°-180°	49.0	1.5
0°-180°	3283.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1086	1086	1086	1086	1086	
5°	1084	1082	1077	1082	1082	103
15°	1042	1044	1041	1047	1047	294
25°	966	966	968	976	977	445
35°	855	859	862	871	875	535
45°	719	726	732	739	742	554
55°	561	568	578	587	591	501
65°	386	392	406	422	429	382
75°	195	207	238	266	276	208
85°	34	62	107	142	154	43
90°	0	23	63	95	106	1
95°	0	6	33	59	69	0
105°	0	1	5	16	21	1
115°	1	1	1	3	4	1
125°	0	0	0	0	0	0
135°	0	0	0	0	0	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

TEST NUMBER: P517990

CATALOG NUMBER: HVL8-2-LD4-3LO-40-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1085.8	1085.8	1085.8	1085.8	1085.8
2.5°	1087.1	1085.6	1080.7	1085.6	1085.3
5°	1083.5	1081.5	1076.6	1081.7	1081.7
7.5°	1076.3	1075.6	1071.2	1077.1	1077.1
10°	1067.9	1067.6	1064.1	1070.5	1070.7
12.5°	1056.1	1057.1	1053.8	1060.0	1060.7
15°	1042.3	1044.1	1041.3	1047.2	1046.9
17.5°	1027.2	1028.2	1026.2	1032.8	1032.6
20°	1008.5	1009.8	1008.3	1015.2	1015.9
22.5°	987.8	989.6	989.3	996.5	998.5
25°	965.8	966.5	967.6	975.8	977.3
27.5°	941.5	942.7	944.5	951.9	953.5
30°	914.8	916.9	918.9	926.6	928.7
32.5°	886.7	888.7	891.3	901.3	902.3
35°	854.9	858.8	862.4	871.1	874.6
37.5°	823.2	828.1	831.4	840.6	843.4
40°	789.7	794.5	799.9	809.6	811.4
42.5°	754.6	760.2	766.6	775.3	778.4
45°	719.3	725.7	731.6	738.7	742.3
47.5°	681.1	687.5	694.7	702.9	705.2
50°	641.7	649.1	656.8	664.5	668.6
52.5°	601.3	610.2	618.9	627.1	631.0
55°	561.3	568.0	578.5	586.9	590.8
57.5°	519.9	525.5	535.0	548.8	550.8
60°	477.6	482.8	492.5	503.7	508.4
62.5°	431.1	438.0	448.2	462.5	466.6
65°	385.7	392.4	406.0	422.1	428.7
67.5°	342.0	344.3	361.7	378.6	389.3
70°	290.3	299.0	319.2	339.9	348.1
72.5°	245.7	254.4	276.7	301.0	311.3
75°	195.3	207.3	237.5	266.0	275.9
77.5°	151.0	164.3	201.7	230.4	241.9
80°	105.5	126.2	166.9	199.1	211.7
82.5°	66.3	91.9	135.4	169.2	180.2
85°	33.8	62.5	107.3	141.8	154.3
87.5°	9.0	40.4	83.4	116.5	129.3
90°	0.3	23.3	63.2	95.0	106.5
92.5°	0.3	13.1	47.1	75.5	87.3
95°	0.3	6.1	32.8	59.4	68.6
97.5°	0.3	2.6	22.5	44.8	54.0
100°	0.3	1.3	14.3	32.5	40.4
102.5°	0.5	0.8	9.0	23.3	29.7
105°	0.5	0.8	5.4	15.9	21.2
107.5°	0.5	0.8	3.1	10.8	14.6
110°	0.8	0.8	1.8	6.7	9.7

TEST NUMBER: P517990

CATALOG NUMBER: HVL8-2-LD4-3LO-40-UNV-O-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	0.8	1.0	4.4	6.4
115°	0.8	0.8	1.0	2.8	4.1
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)