

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: HALO

Report Number: P798407

Luminaire Tested: ESF2ARGBWMW-WiZ-4000K

Issue Date: 3/27/2024

Test Information

Test Method: LM-79-2019
Report Number: P798407
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2311342B001)
Test Lab: INNOVATION CENTER
Issue Date: 3/27/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ESF2ARGBMW-WiZ-4000K
Description: 2400LM FLOOD AND MOTION WHITE WITH
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

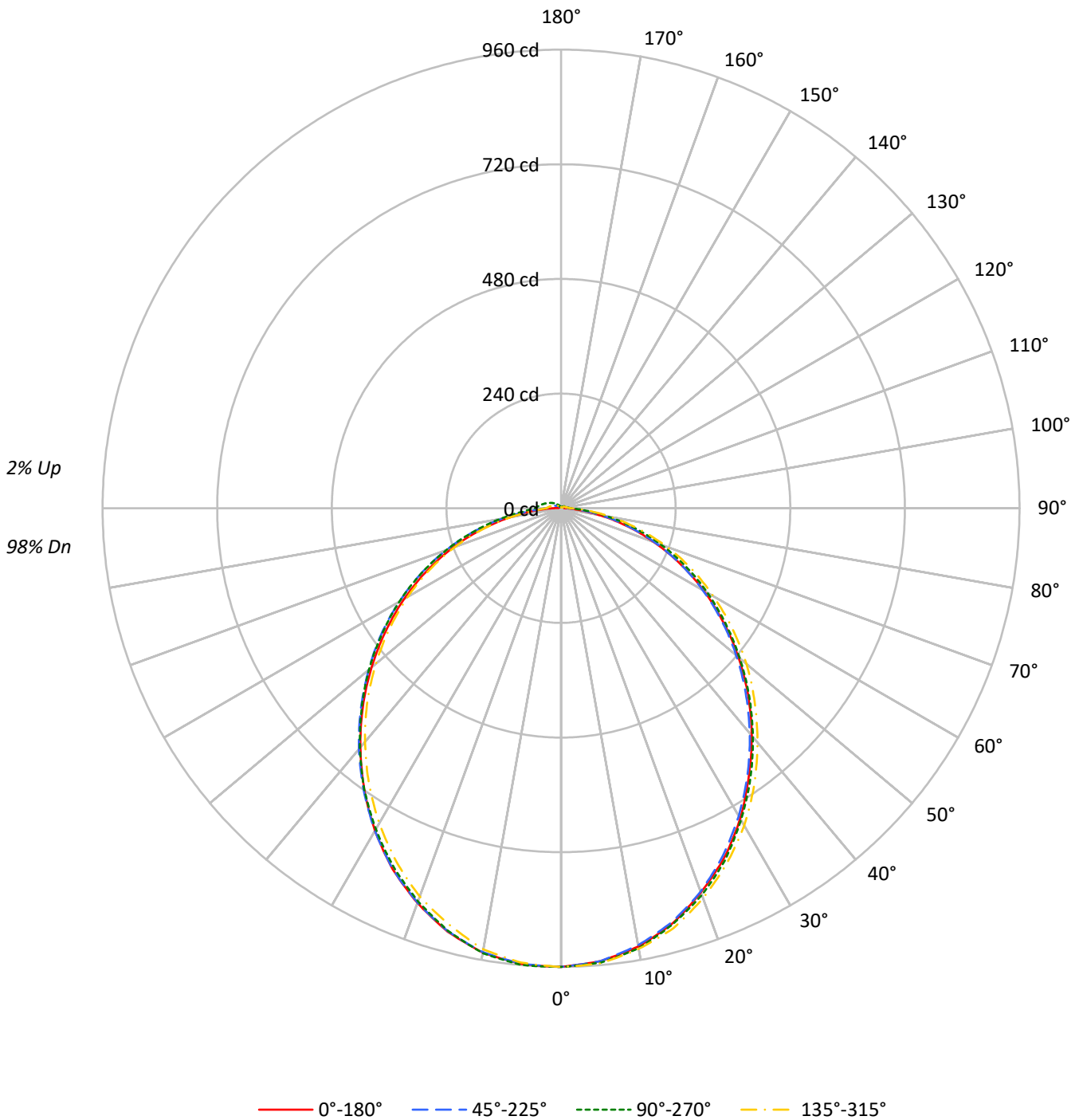
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2594.0 lumens
Efficiency: N/A
Efficacy: 92.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 0.34' x H: 0.13')
CIE Type: Direct

Input Watts (W): 28.2
Input Voltage (V): 120
Input Current (A_{in}): 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

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	118	118	118	118	115	115	115	115	110	110	110	105	105	105	100	100	100	100	100	100	98
1	108	103	99	95	105	101	97	93	96	93	90	92	89	87	88	86	84	84	84	84	81
2	98	90	83	77	95	88	82	76	84	79	74	80	76	72	77	73	70	70	70	70	68
3	90	79	71	65	87	77	70	64	74	68	62	71	66	61	68	64	60	60	60	60	57
4	82	70	61	55	80	69	61	54	66	59	53	63	57	52	61	56	51	51	51	51	49
5	76	63	54	47	73	62	53	47	59	52	46	57	51	45	55	49	45	45	45	45	43
6	70	57	48	41	68	56	47	41	54	46	41	52	45	40	50	44	39	39	39	39	37
7	65	51	43	37	63	51	42	36	49	41	36	47	40	36	46	40	35	35	35	35	33
8	60	47	39	33	59	46	38	33	45	37	32	43	37	32	42	36	32	32	32	32	30
9	57	43	35	30	55	42	35	29	41	34	29	40	33	29	39	33	29	29	29	29	27
10	53	40	32	27	52	39	32	27	38	31	26	37	31	26	36	30	26	26	26	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	120511	120511	120511	120511
5°	115969	114944	116713	115522
10°	111202	108978	112730	110179
15°	106052	102594	108090	104107
20°	100288	96436	103029	97992
25°	94884	90213	97937	92000
30°	88971	83568	92398	86019
35°	82737	77188	86719	80191
40°	76958	70789	80946	74211
45°	71044	64595	75222	68408
50°	64881	58388	69298	62727
55°	58486	52288	63258	56853
60°	51930	46247	57111	51056
65°	44804	39991	50352	44778
70°	36847	33269	42893	38011
75°	27922	25869	34271	30808
80°	17984	17874	24387	23256
85°	8347	9888	13761	15911

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 180°
 Vertical Angle: 45°
 Luminance: 75222 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.5	3.5
10°-20°	255.5	9.8
20°-30°	376.9	14.5
30°-40°	439.2	16.9
40°-50°	441.1	17.0
50°-60°	389.6	15.0
60°-70°	296.7	11.4
70°-80°	176.8	6.8
80°-90°	63.9	2.5
90°-100°	22.3	0.9
100°-110°	15.7	0.6
110°-120°	10.7	0.4
120°-130°	6.7	0.3
130°-140°	4.0	0.2
140°-150°	2.2	0.1
150°-160°	1.3	0.0
160°-170°	0.7	0.0
170°-180°	0.2	0.0
0°-30°	722.9	27.9
0°-40°	1162.2	44.8
0°-60°	1992.8	76.8
0°-90°	2530.2	97.5
90°-120°	48.7	1.9
90°-150°	61.6	2.4
90°-180°	64.0	2.5
0°-180°	2594.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	960	960	960	960	960	
5°	951	955	958	960	951	90
15°	900	902	918	915	900	253
25°	808	813	834	829	808	372
35°	686	691	718	718	686	429
45°	554	557	587	590	554	428
55°	414	420	448	457	414	371
65°	275	288	310	323	275	273
75°	140	159	172	190	140	149
85°	31	49	52	78	31	37
90°	9	18	15	54	9	8
95°	7	15	6	48	7	6
105°	5	13	4	36	5	5
115°	4	10	3	26	4	4
125°	3	7	3	18	3	3
135°	3	5	3	12	3	2
145°	2	2	2	7	2	1
155°	2	2	2	4	2	1
165°	2	2	2	3	2	1
175°	2	2	2	2	2	0
180°	2	2	2	2	2	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	960.1	960.1	960.1	960.1	960.1	960.1	960.1	960.1	960.1	960.1	960.1
5°	951.4	949.3	951.3	950.8	954.7	954.2	956.2	955.6	957.5	953.9	956.9
10°	931.7	928.6	928.9	929.0	935.2	934.2	936.6	938.8	944.5	940.3	943.7
15°	900.3	894.4	896.8	897.4	902.0	903.5	910.1	913.5	917.6	914.8	916.4
20°	856.0	853.1	854.2	854.1	861.7	865.2	868.8	875.9	879.4	877.1	878.7
25°	808.1	803.9	802.1	802.9	812.9	812.2	820.9	829.3	834.1	830.5	833.4
30°	750.3	743.8	744.1	745.2	753.6	757.0	767.0	774.2	779.2	778.1	779.6
35°	685.5	680.1	680.9	682.6	691.3	695.5	705.5	713.8	718.5	717.1	720.4
40°	621.4	616.5	614.6	617.0	624.8	631.0	640.0	648.4	653.6	654.1	658.4
45°	554.3	546.9	546.5	549.9	557.4	564.0	573.4	581.5	586.9	588.7	592.7
50°	484.7	477.8	478.6	482.7	488.5	495.5	507.0	514.1	517.7	521.0	525.4
55°	414.2	407.7	410.6	415.5	420.4	427.8	437.1	443.3	448.0	451.9	459.6
60°	344.8	339.5	342.4	347.9	353.9	360.8	367.7	375.3	379.2	382.7	391.0
65°	275.4	270.9	275.1	280.8	288.2	294.8	302.4	305.0	309.5	315.0	323.3
70°	206.6	203.7	208.7	214.9	223.1	228.6	235.0	236.3	240.5	247.1	255.6
75°	140.3	138.0	144.1	151.4	159.2	164.6	169.0	169.6	172.2	179.8	189.4
80°	79.2	77.8	85.5	91.4	99.3	104.0	106.5	106.7	107.4	115.1	123.6
85°	31.3	31.3	37.7	42.4	48.6	52.1	53.4	51.2	51.6	56.2	60.5
90°	9.2	10.2	15.0	17.1	18.5	19.8	19.5	16.2	15.1	23.3	31.0
95°	6.9	8.4	12.9	15.3	15.0	14.9	13.5	8.9	5.9	15.7	23.4
100°	5.7	7.0	11.0	13.4	13.4	13.2	11.2	7.4	5.0	13.5	20.1
105°	5.1	5.9	9.7	12.0	12.6	12.1	10.0	6.0	4.5	10.0	17.5
110°	4.2	5.1	8.5	10.7	10.7	10.1	8.6	5.0	4.0	7.5	15.0
115°	3.9	3.9	7.2	9.2	10.0	8.5	7.4	4.7	3.4	6.0	12.8
120°	3.5	3.6	5.4	7.7	8.6	7.4	5.3	3.4	3.2	5.0	10.0
125°	3.2	2.9	4.2	6.5	7.4	6.0	3.7	2.5	3.0	5.0	8.5
130°	2.6	2.8	3.6	5.3	5.7	4.7	3.6	2.5	2.8	3.6	7.4
135°	2.6	2.5	2.8	4.3	4.9	3.5	2.5	2.4	2.6	3.3	5.7
140°	2.5	2.4	2.5	3.4	3.6	2.8	2.5	2.3	2.4	2.5	4.9
145°	2.3	2.4	2.1	2.7	2.5	2.1	2.2	1.7	2.1	2.1	4.4
150°	2.2	2.3	2.1	2.2	2.4	2.0	2.1	2.3	2.5	2.4	3.9
155°	2.5	2.4	2.6	2.4	2.1	2.0	2.1	2.4	2.5	2.4	3.4
160°	2.5	2.4	2.5	2.4	2.1	2.1	2.1	2.5	2.5	2.5	2.9
165°	2.5	2.4	2.5	2.4	2.4	2.4	2.4	2.5	2.3	2.6	2.4
170°	2.5	2.4	2.5	2.4	2.4	2.4	2.5	2.5	2.3	2.7	2.3
175°	2.5	2.4	2.5	2.6	2.5	2.4	2.5	2.3	2.4	2.7	2.5
180°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	960.1	960.1	960.1	960.1	960.1	960.1
5°	955.4	959.5	954.3	954.8	957.0	951.4
10°	940.2	945.5	939.6	937.5	932.0	931.7
15°	912.3	915.3	908.4	903.0	900.5	900.3
20°	874.3	875.6	868.8	865.0	862.0	856.0
25°	828.2	829.0	820.8	816.3	809.5	808.1
30°	775.3	775.7	768.4	761.4	754.8	750.3
35°	717.8	718.2	707.3	701.7	694.7	685.5
40°	656.5	655.0	646.4	638.4	628.2	621.4
45°	592.0	590.3	582.6	573.7	561.3	554.3
50°	525.8	524.8	515.4	505.9	492.9	484.7
55°	459.0	457.1	448.1	437.7	424.7	414.2
60°	391.6	390.7	381.1	370.5	355.9	344.8
65°	324.4	322.7	313.7	302.4	287.0	275.4
70°	258.2	254.9	247.2	235.8	219.1	206.6
75°	192.6	189.6	182.4	169.7	153.5	140.3
80°	131.5	129.2	121.8	105.6	90.3	79.2
85°	79.5	78.2	72.8	51.7	39.8	31.3
90°	49.8	54.1	49.6	30.7	20.8	9.2
95°	41.9	47.9	43.1	26.7	17.2	6.9
100°	36.3	42.0	38.0	23.0	14.5	5.7
105°	31.1	36.4	32.2	19.4	11.6	5.1
110°	27.1	31.4	27.4	16.9	9.3	4.2
115°	22.5	26.3	23.3	15.1	7.9	3.9
120°	18.7	22.2	19.9	11.6	6.7	3.5
125°	15.6	18.1	16.3	10.0	5.8	3.2
130°	12.5	14.9	13.3	8.2	5.0	2.6
135°	10.1	11.9	10.8	7.0	4.1	2.6
140°	7.4	9.3	8.8	5.5	3.6	2.5
145°	5.7	7.2	6.7	4.3	3.1	2.3
150°	3.5	5.3	5.1	3.6	2.8	2.2
155°	2.4	4.1	3.9	3.3	2.7	2.5
160°	2.4	3.2	3.2	2.8	2.7	2.5
165°	2.4	2.8	2.9	2.7	2.7	2.5
170°	2.4	2.6	2.7	2.8	2.7	2.5
175°	2.1	2.5	2.7	2.5	2.7	2.5
180°	2.5	2.5	2.5	2.5	2.5	2.5



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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room Dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	24.9	26.5	25.3	26.8	27.2	25.3	26.9	25.7	27.2	27.6
	3H	26.3	27.7	26.7	28.1	28.5	26.8	28.2	27.2	28.6	29.0
	4H	26.7	28.1	27.2	28.5	28.9	27.4	28.7	27.8	29.1	29.5
	6H	27.0	28.2	27.4	28.6	29.1	27.7	28.9	28.2	29.4	29.8
	8H	27.0	28.2	27.5	28.6	29.1	27.8	29.0	28.3	29.4	29.9
	12H	27.0	28.1	27.5	28.6	29.1	27.9	29.0	28.3	29.4	29.9
4H	2H	25.4	26.8	25.9	27.2	27.6	25.7	27.1	26.2	27.5	27.9
	3H	27.0	28.1	27.5	28.6	29.0	27.5	28.6	27.9	29.0	29.5
	4H	27.5	28.5	28.0	29.0	29.5	28.1	29.1	28.6	29.6	30.1
	6H	27.8	28.7	28.3	29.2	29.7	28.5	29.4	29.0	29.9	30.4
	8H	27.9	28.7	28.4	29.2	29.8	28.7	29.5	29.2	30.0	30.5
	12H	27.9	28.7	28.5	29.2	29.7	28.8	29.5	29.3	30.0	30.6
8H	4H	27.8	28.6	28.3	29.1	29.6	28.3	29.1	28.8	29.6	30.1
	6H	28.1	28.8	28.7	29.4	29.9	28.8	29.5	29.3	30.0	30.6
	8H	28.2	28.9	28.8	29.4	30.0	29.0	29.6	29.5	30.1	30.7
	12H	28.3	28.9	28.8	29.4	30.0	29.1	29.7	29.6	30.2	30.8
12H	4H	27.8	28.5	28.3	29.0	29.6	28.3	29.0	28.8	29.5	30.1
	6H	28.2	28.8	28.7	29.3	29.9	28.8	29.4	29.4	29.9	30.5
	8H	28.3	28.9	28.9	29.4	30.0	29.0	29.6	29.6	30.1	30.7

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