

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: HALO

Report Number: P599647

Luminaire Tested: **RL4069WZRGBWWH 6500K**

Issue Date: 5/31/2022

Tested By:

Approved By:



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**Test Information**

Test Method: LM-79-08  
 Report Number: P599647  
 Test Lab: ETA TESTING TECHNOLOGY CO., LTD.  
 Issue Date: 5/31/2022  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: RL4069WZRGBWWH 6500K  
 Description: 4 INCH RL WIZ SELECTABLE CCT  
 Light Source: (1) HIGH LUMEN LED 90CRI / 6500K CCT  
 Ballast/Driver: -

**Summary**

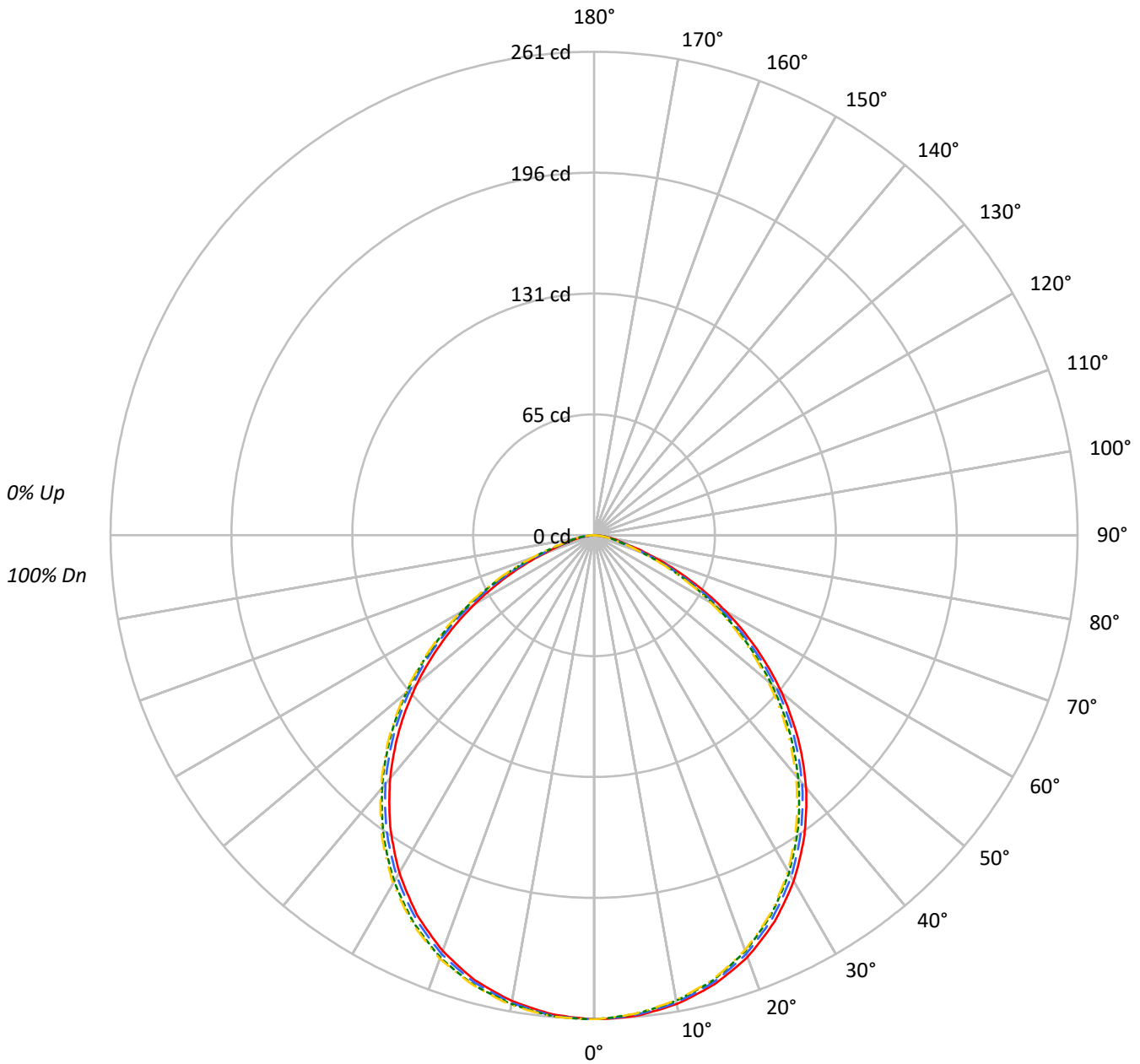
Lumens per Lamp: 630.83 (1 lamp)  
 Luminaire Lumens: 607.9 lumens  
 Efficiency: 96.4%  
 Efficacy: 86.8 lumens/watt  
 Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.3  
 Luminous Opening: Circular (Dia: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 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: 25 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	GONIO 1 IN0055	4/22/2021	10/22/2021
Power Meter	XITRON 2801 IN0197	12/1/2020	12/1/2021
AC Power Source	CHROMA 61505 IN0196	12/1/2020	12/1/2021
DC Power Supply	AGILENT E3634A IN0198	11/30/2020	11/30/2021
Room Thermometer	ONSET IN0143	12/1/2020	12/1/2021

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### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - - - 90°-270°    - · - 135°-315°

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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	115	115	115	115	112	112	112	112	107	107	107	102	102	102	98	98	98	98	98	98	96	
1	106	102	99	96	104	100	97	94	96	94	91	92	90	88	89	87	86	86	86	86	84	
2	98	91	85	80	95	89	84	79	86	81	77	82	79	75	80	77	74	74	74	74	72	
3	90	81	74	68	88	79	73	67	76	71	66	74	69	65	71	67	64	64	64	64	62	
4	83	72	64	58	81	71	64	58	68	62	57	66	61	56	64	60	56	56	56	56	54	
5	76	65	57	51	74	64	56	51	62	55	50	60	54	50	58	53	49	49	49	49	47	
6	71	59	51	45	69	58	50	45	56	49	44	55	48	44	53	48	43	43	43	43	42	
7	66	53	45	40	64	53	45	40	51	44	39	50	44	39	49	43	39	39	39	39	37	
8	61	49	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	35	35	35	33	
9	57	45	37	32	56	44	37	32	43	37	32	42	36	32	41	36	32	32	32	32	30	
10	54	42	34	29	53	41	34	29	40	34	29	39	33	29	38	33	29	29	29	29	27	

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	32897	32897	32897	32897
5°	32909	32758	32795	32922
10°	32842	32612	32625	32842
15°	32703	32390	32403	32742
20°	32450	31982	31982	32491
25°	31979	31396	31396	32021
30°	31331	30575	30546	31360
35°	30404	29513	29482	30435
40°	29259	28175	28142	29259
45°	27747	26501	26483	27782
50°	25883	24454	24434	25922
55°	23543	21919	21897	23565
60°	20639	18726	18777	20665
65°	16914	14860	14889	16974
70°	12400	10192	10266	12511
75°	8218	6856	6856	8120
80°	6958	5580	5653	7030
85°	5343	3177	3177	5631

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	24.7	4.1	3.9
10°-20°	70.4	11.6	11.2
20°-30°	105.0	17.3	16.6
30°-40°	121.7	20.0	19.3
40°-50°	117.3	19.3	18.6
50°-60°	92.5	15.2	14.7
60°-70°	53.4	8.8	8.5
70°-80°	18.6	3.1	3.0
80°-90°	4.0	0.7	0.6
90°-100°	0.1	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	200.1	32.9	31.7
0°-40°	321.9	53.0	51.0
0°-60°	531.7	87.5	84.3
0°-90°	607.7	100.0	96.3
90°-120°	0.2	0.0	0.0
90°-150°	0.2	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	607.9	100.0	96.4

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	261	261	261	261	261	
5°	260	259	260	261	260	25
15°	251	249	249	251	251	71
25°	230	226	226	231	230	106
35°	198	192	192	198	198	124
45°	156	149	149	156	156	120
55°	107	100	100	107	107	96
65°	57	50	50	57	57	57
75°	17	14	14	17	17	20
85°	4	2	2	4	4	4
90°	0	0	0	0	0	1
95°	0	0	0	0	0	0
105°	0	0	0	0	0	0
115°	0	0	0	0	0	0
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

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	261.4	261.4	261.4	261.4	261.4	261.4	261.4	261.4	261.4	261.4	261.4
5°	260.5	260.4	259.9	259.8	259.3	259.2	259.2	259.3	259.6	259.6	260.3
10°	257.0	256.5	256.1	255.8	255.2	254.7	254.8	255.1	255.3	255.6	256.3
15°	251.0	250.8	249.8	249.2	248.6	248.0	248.2	247.8	248.7	248.9	249.9
20°	242.3	241.5	240.4	239.7	238.8	238.0	238.2	238.0	238.8	239.2	240.6
25°	230.3	229.5	227.9	227.4	226.1	225.1	225.3	225.1	226.1	226.4	228.1
30°	215.6	214.4	212.8	211.8	210.4	209.1	209.3	208.8	210.2	210.8	212.9
35°	197.9	196.9	194.9	193.7	192.1	190.5	190.5	190.3	191.9	192.8	195.2
40°	178.1	177.0	174.7	173.3	171.5	169.5	169.5	169.3	171.3	172.5	175.2
45°	155.9	154.9	152.4	151.0	148.9	146.8	146.6	146.6	148.8	150.1	153.2
50°	132.2	131.2	128.7	126.9	124.9	122.6	122.5	122.4	124.8	126.4	129.4
55°	107.3	106.3	103.5	101.8	99.9	97.7	97.9	97.7	99.8	101.4	104.5
60°	82.0	80.8	77.8	76.0	74.4	72.5	72.7	72.5	74.6	76.0	79.2
65°	56.8	55.4	52.4	50.9	49.9	48.2	48.6	48.3	50.0	51.1	54.1
70°	33.7	32.1	29.7	28.3	27.7	26.7	27.0	26.8	27.9	28.8	31.0
75°	16.9	16.0	15.1	14.3	14.1	14.0	13.7	14.0	14.1	15.0	15.3
80°	9.6	9.1	8.4	8.0	7.7	7.3	7.4	7.4	7.8	8.2	8.9
85°	3.7	3.4	2.7	2.3	2.2	1.8	1.8	1.8	2.2	2.6	3.2
90°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
95°	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1
100°	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1
105°	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
110°	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	261.4	261.4	261.4	261.4	261.4	261.4
5°	260.4	260.6	260.6	260.7	260.6	260.5
10°	256.8	257.0	257.4	257.6	257.4	257.0
15°	250.6	251.3	251.7	251.6	251.5	251.0
20°	241.5	242.6	243.2	243.3	243.0	242.3
25°	229.2	230.6	231.7	231.5	231.6	230.3
30°	214.2	215.8	217.1	217.0	216.9	215.6
35°	196.5	198.1	199.6	199.5	199.4	197.9
40°	176.7	178.1	179.5	179.2	179.5	178.1
45°	154.7	156.1	157.5	157.3	157.4	155.9
50°	131.0	132.4	133.8	133.4	133.7	132.2
55°	106.1	107.4	109.1	108.7	109.0	107.3
60°	80.9	82.1	83.9	83.5	83.6	82.0
65°	55.7	57.0	59.0	58.8	58.8	56.8
70°	32.7	34.0	35.5	35.7	35.4	33.7
75°	16.8	16.7	17.6	17.6	17.6	16.9
80°	9.4	9.7	10.2	10.2	10.2	9.6
85°	3.6	3.9	4.3	4.2	4.2	3.7
90°	0.1	0.1	0.1	0.1	0.1	0.1
95°	0.1	0.1	0.1	0.1	0.1	0.1
100°	0.1	0.1	0.1	0.1	0.1	0.0
105°	0.1	0.1	0.1	0.0	0.0	0.0
110°	0.1	0.1	0.1	0.0	0.0	0.0
115°	0.1	0.1	0.0	0.0	0.0	0.0
120°	0.1	0.1	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.1	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)