

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: P599646

Luminaire Tested: **RL4069WZRGBWWH 5000K**

Issue Date: 5/31/2022

Tested By:

Approved By:



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**Test Information**

Test Method: LM-79-08  
 Report Number: P599646  
 Test Lab: ETA TESTING TECHNOLOGY CO., LTD.  
 Issue Date: 5/31/2022  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: RL4069WZRGBWWH 5000K  
 Description: 4 INCH RL WIZ SELECTABLE CCT  
 Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
 Ballast/Driver: -

**Summary**

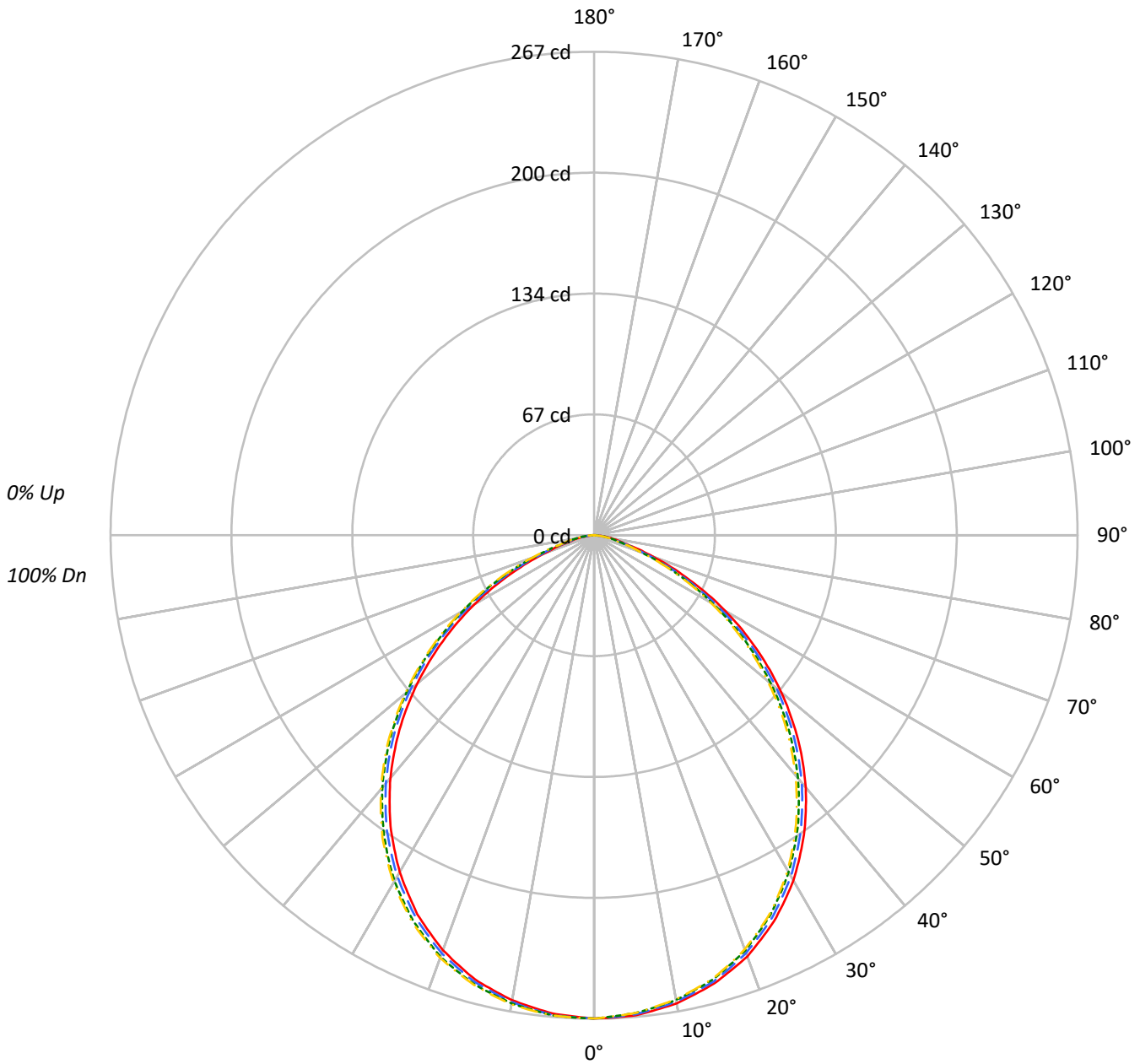
Lumens per Lamp: 630.83 (1 lamp)  
 Luminaire Lumens: 620.9 lumens  
 Efficiency: 98.4%  
 Efficacy: 87.4 lumens/watt  
 Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.3  
 Luminous Opening: Circular (Dia: 0.33' x H: 0')  
 CIE Type: Direct

Input Watts (W): 7.1  
 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: 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	117	117	117	117	114	114	114	114	109	109	109	105	105	105	100	100	100	100	100	100	98
1	109	105	101	98	106	102	99	96	98	96	93	94	92	90	91	89	88	88	88	88	86
2	100	93	87	82	97	91	85	81	87	83	79	84	80	77	81	78	75	75	75	75	73
3	92	82	75	69	89	81	74	69	78	72	67	75	70	66	73	69	65	65	65	65	63
4	84	74	66	60	82	72	65	59	70	64	58	68	62	58	66	61	57	57	57	57	55
5	78	66	58	52	76	65	57	52	63	56	51	61	55	51	59	54	50	50	50	50	48
6	72	60	52	46	70	59	51	46	57	50	45	56	50	45	54	49	44	44	44	44	42
7	67	55	46	41	66	54	46	41	52	45	40	51	45	40	50	44	40	40	40	40	38
8	63	50	42	37	61	49	42	36	48	41	36	47	41	36	46	40	36	36	36	36	34
9	59	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	32	32	32	32	31
10	55	42	35	30	54	42	35	30	41	34	30	40	34	30	39	34	30	30	30	30	28

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

	0°	90°	180°	270°
0°	33589	33589	33589	33589
5°	33617	33452	33490	33617
10°	33545	33302	33315	33545
15°	33393	33080	33093	33432
20°	33147	32678	32665	33187
25°	32660	32063	32063	32702
30°	31999	31229	31200	32043
35°	31049	30143	30112	31080
40°	29883	28783	28750	29883
45°	28352	27071	27053	28370
50°	26431	24982	24963	26470
55°	24048	22402	22380	24070
60°	21067	19129	19180	21118
65°	17272	15187	15217	17331
70°	12658	10376	10450	12768
75°	8412	7002	7002	8266
80°	7102	5725	5798	7175
85°	5487	3177	3321	5631

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	25.2	4.1	4.0
10°-20°	71.9	11.6	11.4
20°-30°	107.2	17.3	17.0
30°-40°	124.4	20.0	19.7
40°-50°	119.8	19.3	19.0
50°-60°	94.5	15.2	15.0
60°-70°	54.5	8.8	8.6
70°-80°	19.0	3.1	3.0
80°-90°	4.1	0.7	0.7
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°	204.4	32.9	32.4
0°-40°	328.8	53.0	52.1
0°-60°	543.1	87.5	86.1
0°-90°	620.7	100.0	98.4
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°	620.9	100.0	98.4

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	267	267	267	267	267	
5°	266	265	265	266	266	25
15°	256	254	254	257	256	72
25°	235	231	231	236	235	108
35°	202	196	196	202	202	126
45°	159	152	152	159	159	123
55°	110	102	102	110	110	98
65°	58	51	51	58	58	58
75°	17	14	14	17	17	21
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°	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9
5°	266.1	266.0	265.5	265.3	264.8	264.7	264.8	264.9	265.1	265.1	265.9
10°	262.5	262.0	261.5	261.3	260.6	260.2	260.2	260.6	260.7	261.1	261.8
15°	256.3	256.1	255.1	254.6	253.9	253.3	253.5	253.1	254.0	254.3	255.3
20°	247.5	246.6	245.5	244.8	244.0	243.1	243.3	243.1	243.9	244.3	245.8
25°	235.2	234.4	232.8	232.2	230.9	230.0	230.2	229.9	230.9	231.3	233.0
30°	220.2	219.0	217.4	216.4	214.9	213.6	213.8	213.3	214.7	215.3	217.4
35°	202.1	201.1	199.1	197.9	196.2	194.5	194.6	194.3	196.0	197.0	199.4
40°	181.9	180.8	178.4	177.0	175.2	173.2	173.1	172.9	175.0	176.2	178.9
45°	159.3	158.3	155.7	154.2	152.1	150.0	149.8	149.7	152.0	153.3	156.5
50°	135.0	134.0	131.5	129.6	127.6	125.2	125.1	125.1	127.5	129.1	132.2
55°	109.6	108.5	105.7	104.0	102.1	99.8	100.0	99.7	102.0	103.6	106.7
60°	83.7	82.5	79.5	77.6	76.0	74.1	74.3	74.1	76.2	77.7	80.9
65°	58.0	56.6	53.5	51.9	51.0	49.3	49.6	49.3	51.1	52.2	55.2
70°	34.4	32.8	30.3	28.9	28.2	27.3	27.5	27.4	28.4	29.4	31.7
75°	17.3	16.3	15.4	14.7	14.4	14.3	14.0	14.3	14.4	15.3	15.7
80°	9.8	9.3	8.5	8.1	7.9	7.5	7.5	7.5	8.0	8.4	9.1
85°	3.8	3.5	2.8	2.4	2.2	1.8	1.9	1.9	2.3	2.6	3.3
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°	266.9	266.9	266.9	266.9	266.9	266.9
5°	266.0	266.1	266.2	266.2	266.2	266.1
10°	262.3	262.5	262.9	263.1	262.9	262.5
15°	256.0	256.6	257.1	257.0	256.9	256.3
20°	246.6	247.8	248.4	248.5	248.2	247.5
25°	234.1	235.5	236.6	236.5	236.5	235.2
30°	218.8	220.5	221.7	221.6	221.6	220.2
35°	200.7	202.3	203.9	203.7	203.6	202.1
40°	180.5	181.9	183.4	183.1	183.3	181.9
45°	158.0	159.4	160.9	160.6	160.8	159.3
50°	133.8	135.2	136.6	136.2	136.6	135.0
55°	108.4	109.7	111.4	111.0	111.3	109.6
60°	82.6	83.9	85.7	85.3	85.4	83.7
65°	56.9	58.2	60.2	60.0	60.0	58.0
70°	33.4	34.7	36.3	36.4	36.2	34.4
75°	17.1	17.0	18.0	18.0	17.9	17.3
80°	9.6	9.9	10.4	10.4	10.4	9.8
85°	3.7	3.9	4.4	4.3	4.3	3.8
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	0.1	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.1	0.0	0.0	0.0	0.0
140°	0.0	0.1	0.0	0.0	0.0	0.0
145°	0.0	0.1	0.0	0.0	0.0	0.0
150°	0.0	0.1	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)