

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P21169

Luminaire Tested: **ELG405830TBZ(25deg Beam-35deg tilt)**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P21169
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ELG405830TBZ(25deg Beam-35deg tilt)
Description: HALO 4 INCH RECESSED FIXTURE WITH ROUND TUSCAN BRONZE TRIM, TUSCAN BRONZE GIMBAL, NARROW UPPER REFLECTOR AND CLEAR LENS .
---ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS
CREATED USING A 500 WATT, NIST TRACEABLE, OMNI-DIRECTIONAL LAB LUMEN STANDARD IN THE GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET----
Light Source: (1) SMT LED 3000K
(1) 14 WATTS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: 614 (1 lamp)
Luminaire Lumens: 614.1 lumens
Efficiency: 100.0%
Efficacy: 45.2 lumens/watt
Spacing Criteria (0/90/45): 2.63 / 0.67 / 1.56
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

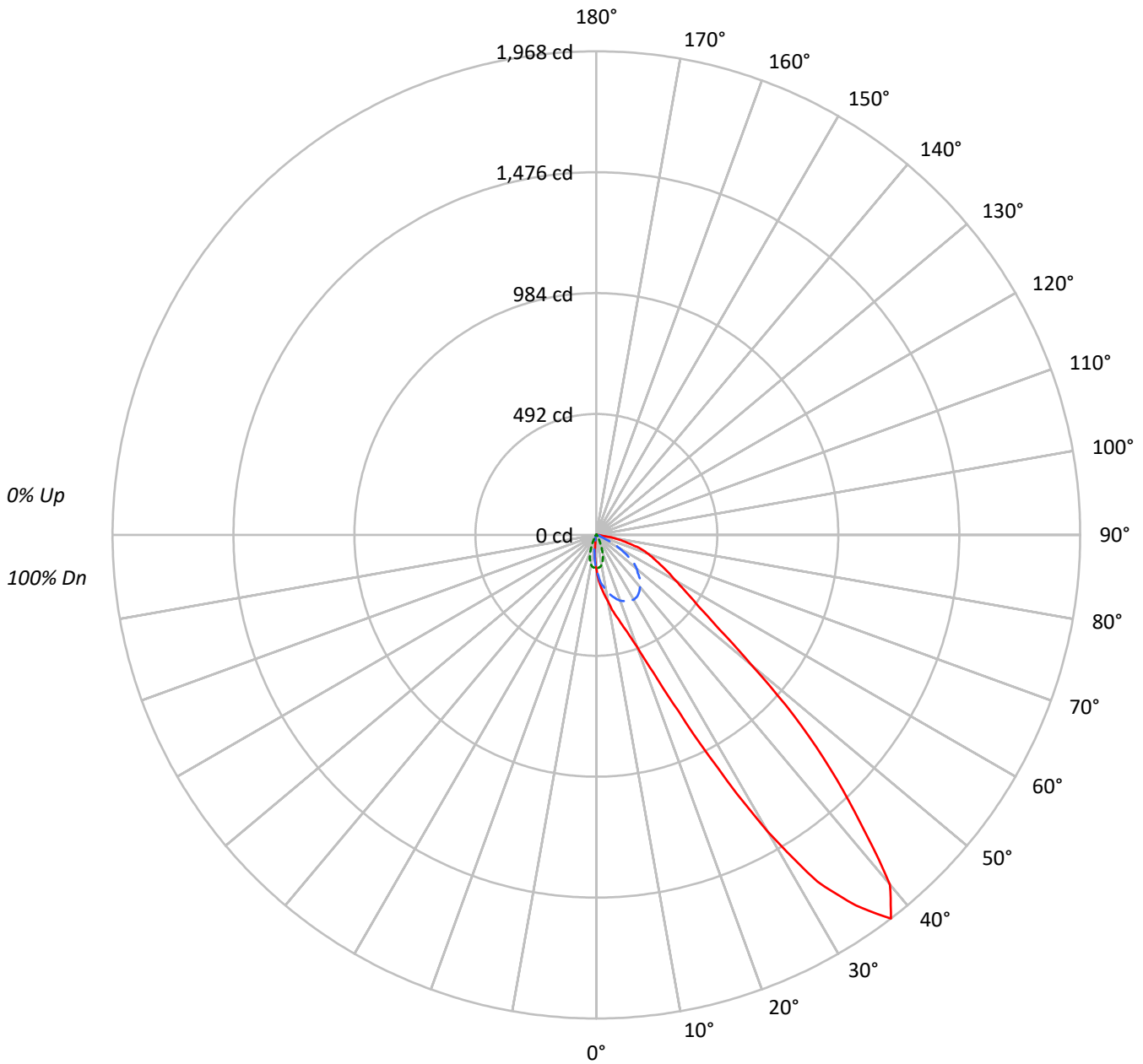
Input Watts (W): 13.6
Input Voltage (V): NR
Input Current (Ain): 0.11946
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88				86	
2	101	93	87	81	98	91	85	81	88	83	79	84	80	77	82	78	75				73	
3	92	82	74	68	90	81	73	68	78	71	66	75	70	65	72	68	64				62	
4	84	73	64	58	82	71	64	57	69	62	57	67	61	56	65	59	55				53	
5	77	65	56	50	75	64	55	49	62	54	49	60	53	48	58	52	48				46	
6	71	58	49	43	69	57	49	43	55	48	42	54	47	42	52	46	42				40	
7	66	52	44	38	64	51	43	37	50	42	37	48	42	37	47	41	37				35	
8	61	47	39	33	59	47	39	33	45	38	33	44	37	32	43	37	32				30	
9	56	43	35	29	55	42	35	29	41	34	29	40	34	29	39	33	29				27	
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26				24	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	16898	16898	16898
5°	26125	16468	8420
10°	34569	15406	2254
15°	45971	13025	1277
20°	63531	9320	394
25°	107789	5308	0
30°	198401	2564	0
35°	277213	1958	0
40°	299168	1771	0
45°	234618	1047	0
50°	157927	192	0
55°	108814	215	0
60°	91769	0	0
65°	84056	0	0
70°	80422	361	0
75°	67673	477	0
80°	46881	0	0
85°	18398	1415	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	12.9	2.1	2.1
10°-20°	40.6	6.6	6.6
20°-30°	87.2	14.2	14.2
30°-40°	159.9	26.0	26.0
40°-50°	146.7	23.9	23.9
50°-60°	88.6	14.4	14.4
60°-70°	53.1	8.6	8.6
70°-80°	21.7	3.5	3.5
80°-90°	3.5	0.6	0.6
90°-100°	0.0	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°	140.7	22.9	22.9
0°-40°	300.6	49.0	49.0
0°-60°	535.9	87.3	87.3
0°-90°	614.1	100.0	100.0
90°-120°	0.0	0.0	0.0
90°-150°	0.0	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	614.1	100.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	137	137	137	137	137	
5°	211	194	133	82	68	22
15°	360	260	102	14	10	107
25°	792	298	39	3	0	406
35°	1841	297	13	1	0	1123
45°	1345	249	6	0	0	1028
55°	506	166	1	0	0	482
65°	288	46	0	0	0	289
75°	142	12	1	0	0	153
85°	13	2	1	1	0	21
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	137	137	137	137	137	137	137	137	137	137	137
2.5°	179	178	177	176	175	173	171	168	165	163	159
5°	211	210	209	208	207	206	204	201	198	194	189
7.5°	243	242	241	238	234	229	224	219	215	211	205
10°	276	274	272	268	264	259	254	247	238	229	220
12.5°	321	319	315	309	301	292	280	268	257	247	235
15°	360	358	352	345	335	324	310	294	276	260	245
17.5°	411	408	400	387	370	353	334	315	295	274	254
20°	484	477	463	442	417	388	359	335	310	285	261
22.5°	605	592	563	520	473	431	389	352	321	292	263
25°	792	771	712	634	554	480	423	372	332	298	265
27.5°	1067	1025	918	781	648	538	455	393	341	302	266
30°	1393	1322	1151	940	740	589	478	407	348	304	264
32.5°	1673	1599	1354	1073	816	621	489	412	349	302	260
35°	1841	1787	1485	1148	854	627	486	408	346	297	256
37.5°	1968	1867	1517	1158	849	611	471	396	339	288	248
40°	1858	1743	1428	1099	799	575	452	380	326	276	237
42.5°	1590	1503	1265	979	714	526	429	360	308	263	222
45°	1345	1273	1075	828	621	480	399	339	289	249	210
47.5°	1092	1028	865	689	539	442	370	317	271	228	193
50°	823	783	687	574	476	398	340	292	250	215	167
52.5°	628	607	553	488	422	358	310	269	230	194	142
55°	506	495	466	421	367	320	281	245	210	166	116
57.5°	432	424	397	363	324	287	255	225	188	138	89
60°	372	365	347	320	289	258	231	201	158	108	59
62.5°	329	322	308	285	260	233	210	175	125	77	33
65°	288	283	273	255	234	212	184	141	91	46	18
67.5°	253	248	240	227	209	186	150	101	56	24	14
70°	223	220	212	198	179	149	106	63	30	16	12
72.5°	192	188	176	160	135	102	64	33	16	14	10
75°	142	140	131	115	91	59	33	17	14	12	8
77.5°	104	99	88	71	48	28	16	13	11	9	3
80°	66	61	49	34	21	15	13	12	9	5	2
82.5°	19	18	17	15	14	13	12	9	5	3	1
85°	13	13	13	12	12	11	9	5	2	2	1
87.5°	12	11	10	10	9	7	4	2	1	1	0
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	112.5°	135°	157.5°
0°	137	137	137	137	137	137	137	137	137	137	137
2.5°	155	152	149	145	143	140	138	135	128	117	108
5°	182	174	166	158	151	144	139	133	110	82	72
7.5°	200	192	183	172	160	148	138	130	88	59	35
10°	212	202	193	180	165	149	136	123	69	27	19
12.5°	223	211	198	184	167	147	129	113	49	18	14
15°	232	216	201	184	165	142	120	102	29	14	12
17.5°	237	221	202	183	162	135	110	87	19	11	10
20°	241	222	203	181	156	126	98	71	16	10	6
22.5°	241	221	201	177	148	113	81	54	14	7	2
25°	240	219	197	170	136	97	65	39	12	3	1
27.5°	239	215	191	159	120	79	48	27	11	2	1
30°	236	211	183	146	102	61	34	18	9	1	1
32.5°	232	203	171	127	81	45	23	15	4	1	1
35°	225	192	154	106	62	31	17	13	4	1	1
37.5°	213	178	133	86	45	21	15	12	2	1	1
40°	201	160	112	65	30	15	13	11	2	1	1
42.5°	186	137	90	46	19	13	12	9	1	0	0
45°	164	116	69	29	15	12	10	6	1	0	1
47.5°	143	94	48	18	14	11	9	3	2	1	1
50°	118	70	28	15	12	9	4	1	1	1	0
52.5°	93	46	18	12	11	6	2	1	1	0	0
55°	68	25	14	11	8	3	1	1	1	0	0
57.5°	42	18	13	10	6	2	1	1	2	1	1
60°	21	13	11	7	2	1	1	0	1	0	0
62.5°	15	12	9	4	2	1	1	1	1	0	0
65°	13	10	6	2	1	1	1	0	1	0	0
67.5°	12	8	3	1	1	1	1	0	1	0	1
70°	10	4	2	1	1	1	1	1	1	0	0
72.5°	7	2	1	1	1	1	1	0	1	0	0
75°	3	1	1	1	1	1	1	1	1	0	1
77.5°	1	1	1	0	1	0	1	0	1	0	0
80°	1	1	1	1	1	1	1	0	1	0	0
82.5°	1	1	1	1	1	1	1	1	1	0	1
85°	1	1	1	1	1	1	1	1	1	1	1
87.5°	1	1	1	1	1	0	1	0	1	1	1
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	180°
0°	137
2.5°	104
5°	68
7.5°	26
10°	18
12.5°	13
15°	10
17.5°	8
20°	3
22.5°	1
25°	0
27.5°	0
30°	0
32.5°	0
35°	0
37.5°	0
40°	0
42.5°	0
45°	0
47.5°	0
50°	0
52.5°	0
55°	0
57.5°	0
60°	0
62.5°	0
65°	0
67.5°	0
70°	0
72.5°	0
75°	0
77.5°	0
80°	0
82.5°	0
85°	0
87.5°	0
90°	0

(END OF REPORT)