

Scaled data based on original data using  
LM-46-04 Photometric Testing of Indoor Luminaires Using High Intensity Discharge or  
Incandescent Filament Lamps (Reaffirmed 2012)

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: E395559

Luminaire Tested: **L1738/L210**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-46-04  
Report Number: E395559  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: L1738/L210  
Description: HALO TRAC - GIMBAL RING, LINEAR SPREAD LENS  
Light Source: 150PAR38FL, 1740 LUMENS  
Ballast/Driver: -

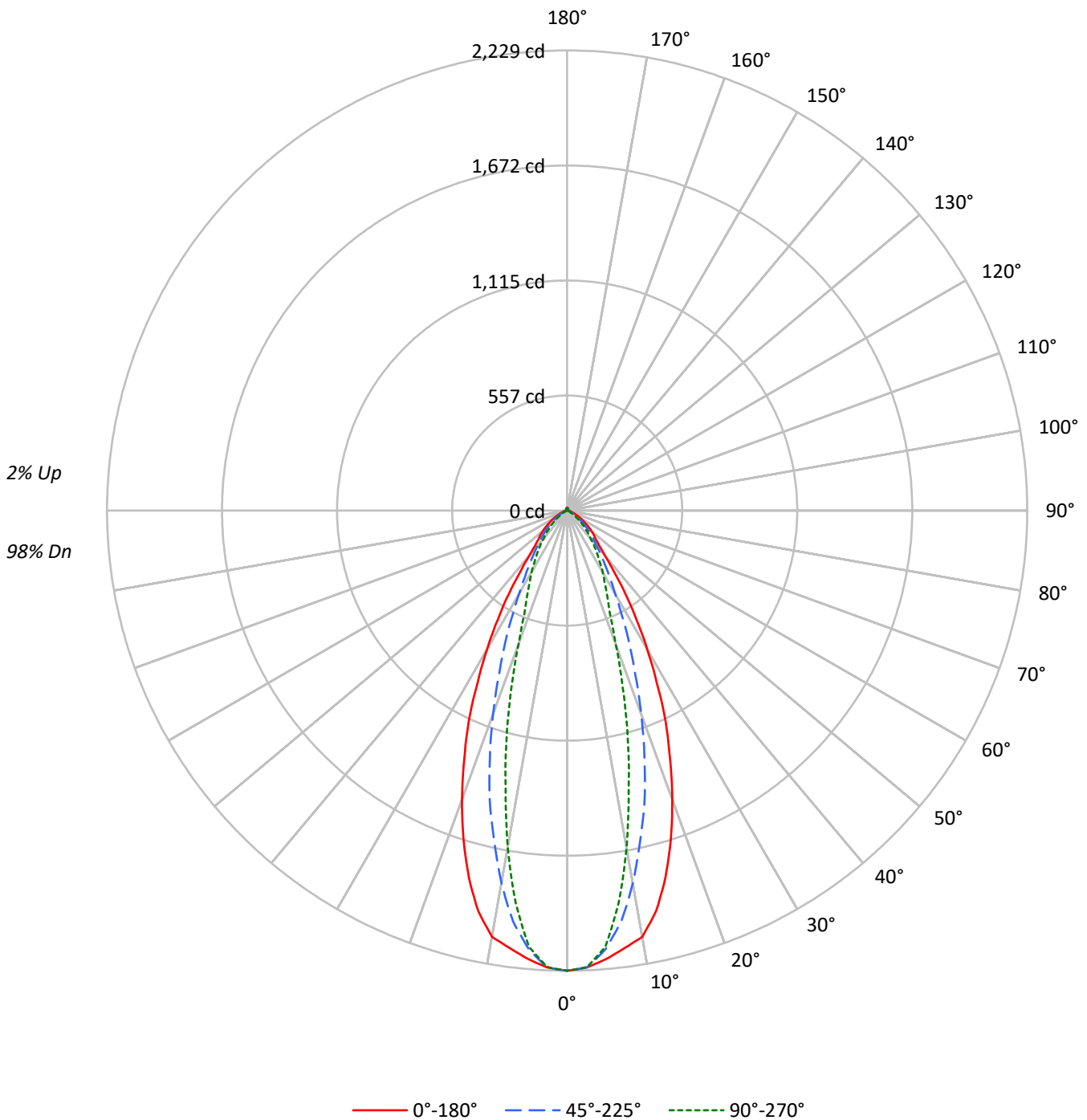
**Summary**

Lumens per Lamp: 1740 (1 lamp)  
Luminaire Lumens: 1444.4 lumens  
Efficiency: 83.0%  
Efficacy: 9.6 lumens/watt  
Spacing Criteria (0/90/45): 0.79 / 0.5 / 0.63  
Luminous Opening: Point Source (0' x 0' x 0')  
CIE Type: Direct

Input Watts (W): 150  
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

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### Luminous Intensity Polar Plot





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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	0
RCR																				
0	98	98	98	98	96	96	96	96	91	91	91		87	87	87		83	83	83	82
1	93	91	89	86	91	89	87	85	85	84	82		82	81	79		79	78	77	75
2	88	84	80	77	86	82	79	76	79	77	74		77	74	72		74	72	71	69
3	83	78	73	70	82	76	72	69	74	71	68		72	69	67		70	67	65	64
4	79	72	67	64	77	71	67	63	69	65	62		67	64	61		66	63	61	59
5	75	68	63	59	73	67	62	58	65	61	58		63	60	57		62	59	56	55
6	71	63	58	55	70	63	58	54	61	57	54		60	56	53		59	55	53	52
7	68	60	54	51	66	59	54	51	58	53	50		57	53	50		56	52	50	48
8	64	56	51	48	63	56	51	48	55	50	47		54	50	47		53	49	47	45
9	61	53	48	45	60	53	48	45	52	48	45		51	47	44		50	47	44	43
10	59	51	46	42	58	50	45	42	49	45	42		49	45	42		48	44	42	41

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

	0°	90°	180°
0°	Luminaire represents a point source (luminous area is zero).		
5°	No luminance values can be calculated.		
10°			
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	195.1	13.5	11.2
10°-20°	403.8	28.0	23.2
20°-30°	350.7	24.3	20.2
30°-40°	221.0	15.3	12.7
40°-50°	127.5	8.8	7.3
50°-60°	69.8	4.8	4.0
60°-70°	30.6	2.1	1.8
70°-80°	12.3	0.8	0.7
80°-90°	7.8	0.5	0.4
90°-100°	3.0	0.2	0.2
100°-110°	2.2	0.2	0.1
110°-120°	2.9	0.2	0.2
120°-130°	3.3	0.2	0.2
130°-140°	3.6	0.2	0.2
140°-150°	3.8	0.3	0.2
150°-160°	3.5	0.2	0.2
160°-170°	2.7	0.2	0.2
170°-180°	0.9	0.1	0.0
0°-30°	949.7	65.7	54.6
0°-40°	1170.6	81.0	67.3
0°-60°	1368.0	94.7	78.6
0°-90°	1418.7	98.2	81.5
90°-120°	8.0	0.6	0.5
90°-150°	18.7	1.3	1.1
90°-180°	26.0	1.8	1.5
0°-180°	1444.4	100.0	83.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2229	2229	2229	2229	2229	
5°	2180	2133	2121	2133	2180	205
15°	1840	1449	1134	1449	1840	508
25°	1129	714	460	714	1129	511
35°	492	318	252	318	492	311
45°	197	163	126	163	197	158
55°	108	75	47	75	108	99
65°	47	28	13	28	47	48
75°	18	10	6	10	18	20
85°	8	5	3	5	8	8
90°	6	3	3	3	6	3
95°	4	2	2	2	4	3
105°	2	2	2	2	2	3
115°	4	3	3	3	4	4
125°	6	3	3	3	6	5
135°	7	4	4	4	7	5
145°	9	6	6	6	9	6
155°	10	7	6	7	10	5
165°	12	10	8	10	12	3
175°	11	10	8	10	11	1
180°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	22.5°	25°	35°	45°	55°	65°	67.5°	75°
0°	2229	2229	2229	2229	2229	2229	2229	2229	2229	2229	2229
2.5°	2215	2213	2226	2221	2222	2217	2215	2216	2213	2213	2215
5°	2180	2179	2181	2168	2168	2139	2133	2118	2109	2115	2118
7.5°	2137	2137	2115	2087	2083	2030	2007	1974	1945	1941	1922
10°	2096	2089	2051	2015	2001	1916	1833	1770	1722	1703	1676
12.5°	1989	1991	1950	1886	1869	1760	1636	1534	1461	1452	1406
15°	1840	1844	1803	1734	1705	1581	1449	1315	1206	1201	1159
17.5°	1669	1685	1641	1563	1537	1393	1244	1097	977	959	914
20°	1489	1510	1459	1393	1356	1216	1049	891	775	747	713
22.5°	1302	1310	1289	1218	1178	1034	864	716	626	601	574
25°	1129	1128	1109	1039	994	852	714	583	512	501	478
27.5°	940	953	930	862	829	705	576	481	428	425	408
30°	776	780	753	683	661	575	464	401	365	359	355
32.5°	625	630	592	536	511	450	382	335	313	313	306
35°	492	489	469	423	410	355	318	288	268	272	268
37.5°	369	359	362	345	336	297	265	247	229	229	226
40°	286	279	284	280	278	250	224	206	193	192	185
42.5°	230	233	231	228	227	210	190	173	163	156	155
45°	197	197	194	190	188	177	163	147	135	134	129
50°	154	153	148	140	137	128	113	99	87	86	80
55°	108	109	104	97	96	84	75	63	54	52	49
60°	73	72	73	68	66	56	47	37	31	30	27
65°	47	47	45	44	44	34	28	21	17	16	14
70°	27	27	27	26	25	20	17	13	10	9	9
75°	18	17	17	16	15	12	10	8	6	6	6
80°	13	12	11	10	10	7	7	5	5	5	5
85°	8	8	7	6	6	5	5	4	3	3	4
90°	6	6	5	5	4	4	3	3	2	2	2
95°	4	4	3	3	3	3	2	2	2	2	2
100°	3	3	2	2	2	2	2	2	2	2	2
105°	2	2	2	2	2	2	2	2	2	2	2
110°	3	3	2	2	2	2	2	2	2	2	2
115°	4	4	4	3	3	3	3	2	2	2	2
120°	6	5	5	5	5	4	4	2	2	2	3
125°	6	6	5	5	4	4	3	2	2	2	3
130°	5	5	5	5	5	4	4	3	2	3	3
135°	7	7	6	6	5	5	4	3	3	3	3
140°	8	8	7	7	7	6	6	4	4	4	4
145°	9	9	8	7	7	6	6	5	4	4	5
150°	10	9	9	8	8	7	7	5	5	5	5
155°	10	10	10	9	9	8	7	6	6	6	6
160°	11	11	10	10	10	9	8	7	7	7	7
165°	12	12	12	11	11	11	10	9	9	8	8
170°	13	13	12	12	12	12	11	10	9	9	9
175°	11	11	11	11	11	10	10	9	9	9	9



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**CANDELA DISTRIBUTION (continued):**

180°	0°	5°	15°	22.5°	25°	35°	45°	55°	65°	67.5°	75°
	0	0	0	0	0	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	85°	90°	95°	105°	112.5°	115°	125°	135°	145°	155°	157.5°
0°	2229	2229	2229	2229	2229	2229	2229	2229	2229	2229	2229
2.5°	2207	2213	2207	2215	2213	2213	2216	2215	2217	2222	2221
5°	2121	2121	2121	2118	2115	2109	2118	2133	2139	2168	2168
7.5°	1929	1915	1929	1922	1941	1945	1974	2007	2030	2083	2087
10°	1678	1657	1678	1676	1703	1722	1770	1833	1916	2001	2015
12.5°	1376	1377	1376	1406	1452	1461	1534	1636	1760	1869	1886
15°	1117	1134	1117	1159	1201	1206	1315	1449	1581	1705	1734
17.5°	888	894	888	914	959	977	1097	1244	1393	1537	1563
20°	688	686	688	713	747	775	891	1049	1216	1356	1393
22.5°	548	541	548	574	601	626	716	864	1034	1178	1218
25°	464	460	464	478	501	512	583	714	852	994	1039
27.5°	394	393	394	408	425	428	481	576	705	829	862
30°	346	344	346	355	359	365	401	464	575	661	683
32.5°	297	294	297	306	313	313	335	382	450	511	536
35°	253	252	253	268	272	268	288	318	355	410	423
37.5°	215	216	215	226	229	229	247	265	297	336	345
40°	177	178	177	185	192	193	206	224	250	278	280
42.5°	151	152	151	155	156	163	173	190	210	227	228
45°	126	126	126	129	134	135	147	163	177	188	190
50°	80	80	80	80	86	87	99	113	128	137	140
55°	48	47	48	49	52	54	63	75	84	96	97
60°	25	23	25	27	30	31	37	47	56	66	68
65°	13	13	13	14	16	17	21	28	34	44	44
70°	8	8	8	9	9	10	13	17	20	25	26
75°	6	6	6	6	6	6	8	10	12	15	16
80°	5	5	5	5	5	5	5	7	7	10	10
85°	49	3	49	4	3	3	4	5	5	6	6
90°	3	3	3	2	2	2	3	3	4	4	5
95°	2	2	2	2	2	2	2	2	3	3	3
100°	2	2	2	2	2	2	2	2	2	2	2
105°	2	2	2	2	2	2	2	2	2	2	2
110°	2	2	2	2	2	2	2	2	2	2	2
115°	3	3	3	2	2	2	2	3	3	3	3
120°	3	3	3	3	2	2	2	4	4	5	5
125°	3	3	3	3	2	2	2	3	4	4	5
130°	3	3	3	3	3	2	3	4	4	5	5
135°	4	4	4	3	3	3	3	4	5	5	6
140°	5	5	5	4	4	4	4	6	6	7	7
145°	5	6	5	5	4	4	5	6	6	7	7
150°	5	5	5	5	5	5	5	7	7	8	8
155°	6	6	6	6	6	6	6	7	8	9	9
160°	7	7	7	7	7	7	7	8	9	10	10
165°	8	8	8	8	8	9	9	10	11	11	11
170°	9	9	9	9	9	9	10	11	12	12	12
175°	8	8	8	9	9	9	9	10	10	11	11





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**CANDELA DISTRIBUTION (continued):**

180°	85°	90°	95°	105°	112.5°	115°	125°	135°	145°	155°	157.5°
	0	0	0	0	0	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	165°	175°	180°
0°	2229	2229	2229
2.5°	2226	2213	2215
5°	2181	2179	2180
7.5°	2115	2137	2137
10°	2051	2089	2096
12.5°	1950	1991	1989
15°	1803	1844	1840
17.5°	1641	1685	1669
20°	1459	1510	1489
22.5°	1289	1310	1302
25°	1109	1128	1129
27.5°	930	953	940
30°	753	780	776
32.5°	592	630	625
35°	469	489	492
37.5°	362	359	369
40°	284	279	286
42.5°	231	233	230
45°	194	197	197
50°	148	153	154
55°	104	109	108
60°	73	72	73
65°	45	47	47
70°	27	27	27
75°	17	17	18
80°	11	12	13
85°	7	8	8
90°	5	6	6
95°	3	4	4
100°	2	3	3
105°	2	2	2
110°	2	3	3
115°	4	4	4
120°	5	5	6
125°	5	6	6
130°	5	5	5
135°	6	7	7
140°	7	8	8
145°	8	9	9
150°	9	9	10
155°	10	10	10
160°	10	11	11
165°	12	12	12
170°	12	13	13
175°	11	11	11



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**CANDELA DISTRIBUTION (continued):**

	165°	175°	180°
180°	0	0	0

(END OF REPORT)