

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: H32026

Luminaire Tested: **M200-23P**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-46-04  
Report Number: H32026  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: M200-23P  
Description: HALO 13" SQ. RECESSED HID  
SPECULAR REFLECTOR FRESNEL LENS  
Light Source: LU50/D/MED 50 WATTS 3800 LUMENS  
ED-17 DIFFUSED HPS  
Ballast/Driver: -

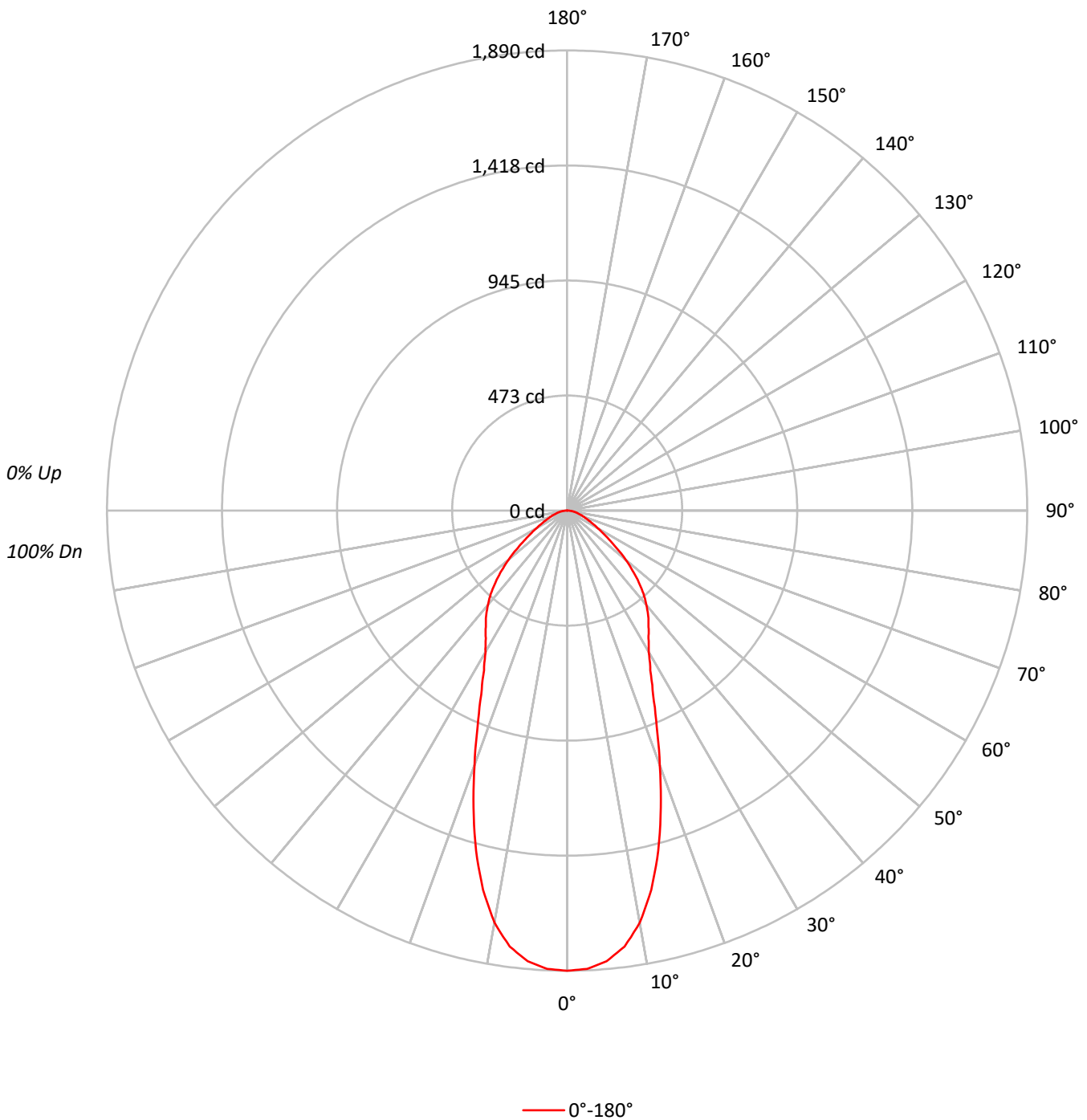
**Summary**

Lumens per Lamp: 3800 (1 lamp)  
Luminaire Lumens: 2012.9 lumens  
Efficiency: 53.0%  
Efficacy: 33.5 lumens/watt  
Spacing Criteria (0/90/45): 0.72 / 0.72 / 0.78  
Luminous Opening: Rectangular (W 0.72' x L: 0.72' x H: 0')  
CIE Type: Direct

Input Watts (W): 60  
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	63	63	63	63	62	62	62	62	59	59	59	56	56	56	54	54	54	53
1	59	57	55	54	58	56	54	53	54	52	51	52	51	50	50	49	48	47
2	55	52	49	46	54	51	48	46	49	47	45	47	45	44	46	44	43	42
3	51	47	43	41	50	46	43	40	45	42	40	43	41	39	42	40	38	37
4	48	43	39	36	47	42	39	36	41	38	35	40	37	35	39	36	35	34
5	45	39	35	32	44	39	35	32	38	34	32	37	34	32	36	33	31	30
6	42	36	32	29	41	36	32	29	35	32	29	34	31	29	33	31	29	28
7	39	33	30	27	39	33	29	27	32	29	27	32	29	26	31	28	26	25
8	37	31	27	25	36	31	27	25	30	27	25	30	27	24	29	26	24	23
9	35	29	25	23	35	29	25	23	28	25	23	28	25	23	27	25	23	22
10	33	27	24	21	33	27	24	21	27	23	21	26	23	21	26	23	21	20

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

	0°
0°	39243
5°	38726
10°	36243
15°	31083
20°	24593
25°	19130
30°	16088
35°	14778
40°	13742
45°	12216
50°	10143
55°	7819
60°	6063
65°	4913
70°	4250
75°	3851
80°	3587
85°	3574



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	173.0	8.6	4.6
10°-20°	397.6	19.8	10.5
20°-30°	390.6	19.4	10.3
30°-40°	365.7	18.2	9.6
40°-50°	318.5	15.8	8.4
50°-60°	197.3	9.8	5.2
60°-70°	101.8	5.1	2.7
70°-80°	51.7	2.6	1.4
80°-90°	16.6	0.8	0.4
90°-100°	0.3	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°	961.2	47.8	25.3
0°-40°	1326.9	65.9	34.9
0°-60°	1842.6	91.5	48.5
0°-90°	2012.7	100.0	53.0
90°-120°	0.3	0.0	0.0
90°-150°	0.3	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	2012.9	100.0	53.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	1890	
5°	1858	173
15°	1446	398
25°	835	391
35°	583	366
45°	416	318
55°	216	197
65°	100	102
75°	48	52
85°	15	15
90°	2	2
95°	0	0
105°	0	0
115°	0	0
125°	0	0
135°	0	0
145°	0	0
155°	0	0
165°	0	0
175°	0	0
180°	0	0



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**CANDELA DISTRIBUTION (FULL):**

0°	
0°	1890
2.5°	1884
5°	1858
7.5°	1806
10°	1719
12.5°	1595
15°	1446
17.5°	1279
20°	1113
22.5°	960
25°	835
27.5°	740
30°	671
32.5°	622
35°	583
37.5°	547
40°	507
42.5°	464
45°	416
47.5°	365
50°	314
52.5°	263
55°	216
57.5°	177
60°	146
62.5°	121
65°	100
67.5°	83
70°	70
72.5°	59
75°	48
77.5°	39
80°	30
82.5°	22
85°	15
87.5°	8
90°	2
92.5°	0
95°	0
97.5°	0
100°	0
102.5°	0
105°	0
107.5°	0
110°	0



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**CANDELA DISTRIBUTION (continued):**

	0°
112.5°	0
115°	0
117.5°	0
120°	0
122.5°	0
125°	0
127.5°	0
130°	0
132.5°	0
135°	0
137.5°	0
140°	0
142.5°	0
145°	0
147.5°	0
150°	0
152.5°	0
155°	0
157.5°	0
160°	0
162.5°	0
165°	0
167.5°	0
170°	0
172.5°	0
175°	0
177.5°	0
180°	0

(END OF REPORT)