

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 COMMERCIAL

Report Number: P584022

Luminaire Tested: **HC820D010-HM80520840-81RWWH**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584022
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-15)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC820D010-HM80520840-81RWWH
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2239.8 lumens
Efficiency: N/A
Efficacy: 112.0 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.07 / 1.16
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

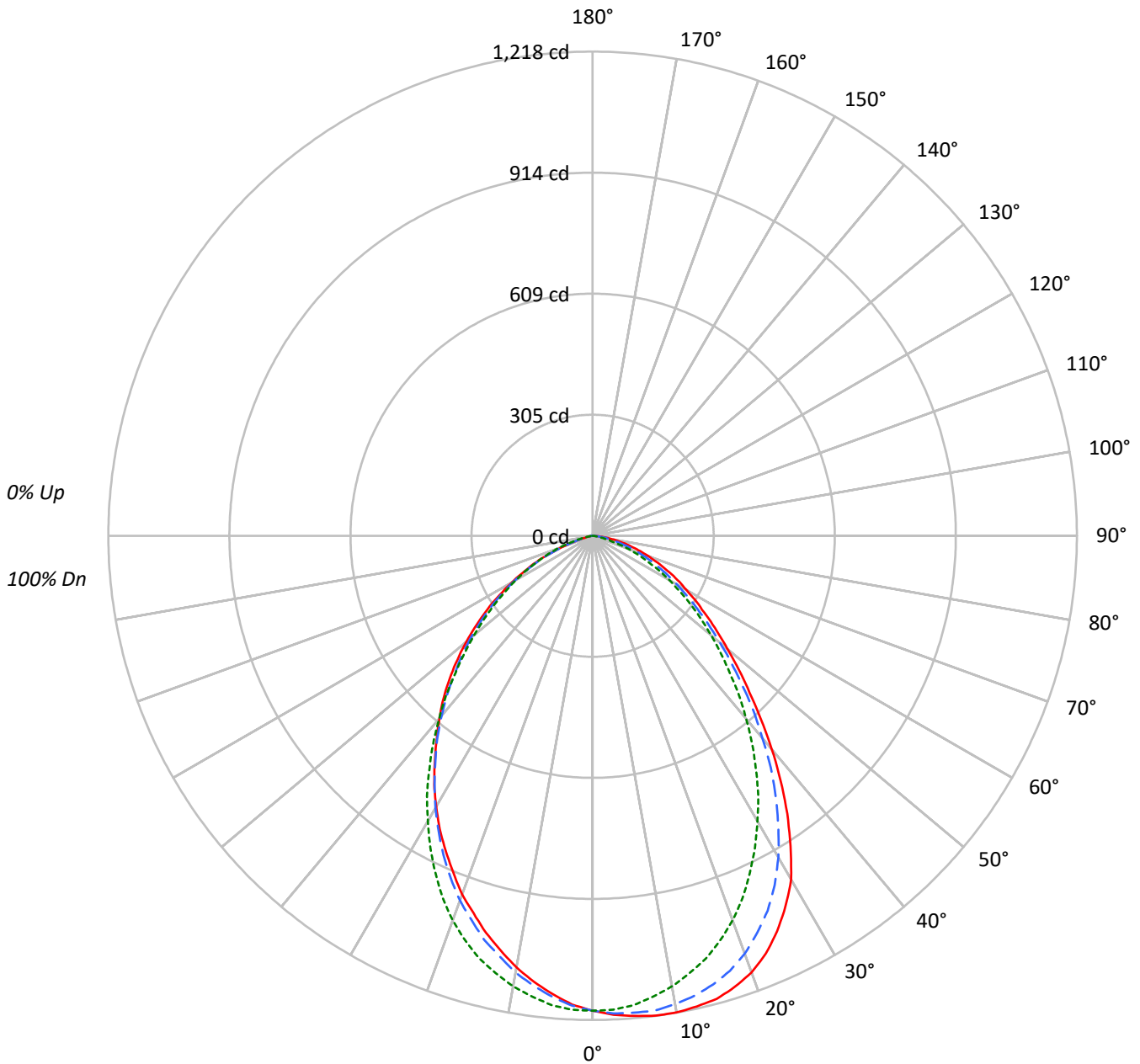
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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																			
1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88																			
2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77																			
3	95	86	79	73	92	84	78	73	81	76	71	79	74	70	76	72	69	67																			
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59																			
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47																			
7	71	58	51	45	69	58	50	45	56	49	45	55	49	44	54	48	44	42																			
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38																			
9	62	50	42	37	61	49	42	37	48	41	37	47	41	37	46	41	36	35																			
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	36843	36843	36843
5°	37535	36684	35829
10°	38122	36040	34521
15°	38504	35145	33025
20°	38358	33787	31503
25°	37345	31840	29744
30°	35568	29514	28012
35°	32118	26938	26020
40°	28218	24177	24112
45°	24356	21251	22171
50°	21199	18637	19880
55°	18795	16193	17322
60°	16775	13673	14376
65°	15118	11098	11339
70°	13425	8322	6717
75°	11581	4813	2883
80°	8914	1723	852
85°	5732	601	601



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	112.2	5.0
10°-20°	312.2	13.9
20°-30°	441.6	19.7
30°-40°	465.3	20.8
40°-50°	395.5	17.7
50°-60°	284.8	12.7
60°-70°	164.3	7.3
70°-80°	56.2	2.5
80°-90°	7.7	0.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	866.0	38.7
0°-40°	1331.3	59.4
0°-60°	2011.6	89.8
0°-90°	2239.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2239.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1195	1195	1195	1195	1195	
5°	1213	1204	1185	1164	1158	116
15°	1206	1169	1101	1052	1034	340
25°	1098	1041	936	887	874	503
35°	853	803	716	690	691	531
45°	558	533	487	490	508	434
55°	350	322	301	312	322	315
65°	207	178	152	149	155	206
75°	97	73	40	26	24	102
85°	16	10	2	2	2	22
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8
2.5°	1206.1	1207.8	1206.1	1206.1	1204.5	1202.8	1201.3	1199.6	1196.4	1193.1	1193.1
5°	1212.6	1215.8	1212.6	1212.6	1207.8	1204.5	1201.3	1196.4	1189.9	1185.1	1185.1
7.5°	1217.5	1217.5	1217.5	1212.6	1209.3	1204.5	1196.4	1188.3	1180.2	1172.1	1168.9
10°	1217.5	1217.5	1215.8	1209.3	1206.1	1196.4	1188.3	1176.9	1165.6	1154.3	1151.0
12.5°	1212.6	1214.2	1211.0	1204.5	1196.4	1185.1	1173.7	1159.2	1146.2	1133.3	1126.8
15°	1206.1	1204.5	1201.3	1193.1	1183.4	1168.9	1157.5	1141.3	1123.5	1107.3	1100.9
17.5°	1189.9	1189.9	1185.1	1176.9	1164.0	1147.8	1130.0	1112.1	1092.8	1074.9	1066.9
20°	1168.9	1168.9	1162.4	1152.7	1139.7	1118.6	1099.3	1078.2	1055.5	1037.7	1029.6
22.5°	1138.1	1139.7	1131.6	1120.3	1105.8	1081.4	1062.0	1036.1	1013.4	992.4	985.9
25°	1097.6	1100.9	1092.8	1081.4	1062.0	1041.0	1016.6	992.4	966.5	945.5	935.8
27.5°	1050.7	1052.3	1044.2	1032.8	1013.4	990.8	966.5	940.6	916.3	893.6	883.9
30°	998.9	992.4	989.2	974.6	953.5	934.1	906.6	885.6	859.7	840.2	828.9
32.5°	926.0	929.3	919.6	908.2	892.1	869.4	846.7	822.4	798.1	783.5	775.5
35°	853.2	856.4	851.5	840.2	822.4	802.9	780.4	762.5	741.5	723.6	715.6
37.5°	777.0	777.0	773.9	767.4	754.5	736.6	713.9	696.1	678.3	663.8	658.8
40°	701.0	697.7	696.1	691.2	680.0	663.8	649.2	634.6	616.8	607.1	600.6
42.5°	626.6	626.6	623.3	618.4	607.1	599.0	584.4	568.2	555.3	545.6	545.6
45°	558.5	560.1	555.3	552.0	545.6	532.6	519.7	508.4	497.0	490.5	487.3
47.5°	498.7	498.7	493.7	490.5	484.0	472.7	461.3	451.6	443.6	438.8	437.1
50°	441.9	441.9	441.9	433.9	425.8	417.7	409.6	398.2	393.4	390.2	388.5
52.5°	393.4	391.8	391.8	385.3	377.2	367.5	359.4	349.6	344.8	341.6	343.3
55°	349.6	349.6	348.1	339.9	331.9	322.2	314.1	306.0	302.7	299.5	301.2
56°	331.9	331.9	330.3	323.7	314.1	306.0	296.2	288.2	283.3	285.0	285.0
57°	318.9	315.7	315.7	307.6	299.5	288.2	280.0	272.0	268.8	267.1	267.1
58°	302.7	301.2	299.5	291.4	283.3	273.6	265.5	257.4	252.6	252.6	250.9
59°	286.5	286.5	283.3	276.8	268.8	259.0	250.9	242.8	237.9	236.4	236.4
60°	272.0	273.6	268.8	262.3	255.8	244.4	234.7	228.2	223.4	221.7	221.7
61°	259.0	259.0	255.8	247.7	239.6	231.6	221.7	213.7	210.5	207.2	207.2
62°	247.7	244.4	242.8	234.7	226.7	216.9	208.9	200.7	195.9	192.7	194.3
63°	233.1	231.6	228.2	221.7	213.7	204.0	194.3	187.8	183.0	178.1	179.7
64°	221.7	220.2	215.4	208.9	200.7	191.0	181.3	174.8	171.6	166.8	165.1
65°	207.2	205.5	204.0	195.9	187.8	178.1	170.0	163.5	158.6	155.4	152.1
66°	194.3	195.9	192.7	186.2	176.5	168.3	157.1	150.6	147.3	142.4	139.2
67°	183.0	183.0	179.7	173.3	163.5	155.4	147.3	139.2	134.4	129.5	127.9
67.5°	176.5	176.5	173.3	165.1	158.6	148.9	140.9	134.4	127.9	124.7	121.4
68°	170.0	170.0	168.3	161.9	153.8	144.1	136.0	127.9	121.4	116.5	114.9
69°	158.6	160.3	157.1	150.6	142.4	132.7	124.7	118.2	111.7	106.9	103.7
70°	148.9	147.3	144.1	137.6	129.5	123.0	114.9	106.9	100.4	93.9	92.3
71°	136.0	136.0	132.7	127.9	119.9	111.7	103.7	97.2	90.7	82.6	81.0
72°	126.2	126.2	123.0	116.5	110.0	102.0	93.9	85.8	81.0	72.8	69.6
72.5°	119.9	121.4	118.2	111.7	105.2	95.5	89.0	82.6	74.5	68.0	64.8
73°	116.5	114.9	113.4	106.9	98.7	92.3	84.2	77.7	69.6	63.1	59.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
77.5°	72.8	72.8	71.3	64.8	58.3	51.8	45.4	38.9	32.4	25.9	22.7
80°	50.2	51.8	48.6	45.4	40.4	34.0	27.5	22.7	16.2	13.0	9.7
82.5°	32.4	32.4	30.7	27.5	24.2	19.4	16.2	11.3	8.0	6.5	4.8
85°	16.2	17.8	16.2	14.5	11.3	9.7	8.0	4.8	3.2	1.7	1.7
87.5°	6.5	6.5	6.5	4.8	4.8	3.2	1.7	1.7	1.7	0.0	0.0
90°	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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8	1194.8
2.5°	1189.9	1189.9	1186.6	1185.1	1183.4	1181.8	1180.2	1178.6	1178.6	1180.2
5°	1180.2	1176.9	1170.5	1168.9	1164.0	1162.4	1159.2	1157.5	1159.2	1157.5
7.5°	1165.6	1159.2	1151.0	1147.8	1141.3	1138.1	1133.3	1133.3	1130.0	1131.6
10°	1146.2	1136.5	1126.8	1120.3	1115.5	1110.6	1107.3	1104.1	1102.5	1102.5
12.5°	1122.0	1110.6	1100.9	1091.1	1083.1	1079.9	1073.4	1073.4	1070.1	1068.5
15°	1094.4	1079.9	1068.5	1058.7	1052.3	1045.8	1041.0	1037.7	1034.5	1034.5
17.5°	1058.7	1045.8	1034.5	1023.1	1013.4	1008.6	1003.8	998.9	998.9	995.6
20°	1019.9	1005.3	995.6	984.3	976.2	968.1	961.7	961.7	958.4	960.0
22.5°	976.2	958.4	948.7	940.6	932.5	926.0	919.6	919.6	917.9	916.3
25°	927.6	913.1	901.7	892.1	887.2	880.7	879.1	875.9	874.2	874.2
27.5°	875.9	864.5	850.0	845.1	838.6	835.3	835.3	833.8	830.5	832.1
30°	820.8	807.9	799.7	796.5	790.0	790.0	788.4	785.2	785.2	786.7
32.5°	767.4	754.5	748.0	746.3	739.8	739.8	738.3	739.8	739.8	741.5
35°	709.1	697.7	696.1	691.2	689.7	689.7	689.7	692.9	696.1	691.2
37.5°	654.0	646.0	641.1	639.5	641.1	641.1	642.7	647.6	646.0	644.3
40°	597.4	590.9	587.7	587.7	590.9	594.2	594.2	599.0	600.6	599.0
42.5°	540.8	535.9	535.9	537.5	540.8	542.3	547.1	552.0	553.6	555.3
45°	487.3	487.3	487.3	488.9	490.5	493.7	500.2	505.1	506.7	508.4
47.5°	435.4	433.9	438.8	440.3	445.3	446.8	451.6	458.1	459.8	461.3
50°	386.9	390.2	391.8	396.7	399.9	399.9	406.4	409.6	414.4	414.4
52.5°	341.6	346.4	348.1	352.9	354.6	356.1	359.4	364.3	367.5	367.5
55°	301.2	302.7	306.0	307.6	312.4	314.1	317.4	318.9	323.7	322.2
56°	283.3	286.5	288.2	291.4	294.7	296.2	299.5	301.2	304.4	306.0
57°	267.1	268.8	273.6	275.2	278.5	278.5	280.0	285.0	285.0	286.5
58°	250.9	254.1	255.8	257.4	260.6	262.3	265.5	267.1	268.8	267.1
59°	236.4	237.9	239.6	239.6	242.8	242.8	247.7	250.9	252.6	252.6
60°	221.7	221.7	223.4	225.1	228.2	229.9	229.9	233.1	233.1	233.1
61°	207.2	207.2	208.9	210.5	212.1	212.1	215.4	215.4	216.9	218.6
62°	194.3	192.7	192.7	194.3	194.3	197.5	199.2	200.7	202.4	200.7
63°	179.7	178.1	178.1	178.1	178.1	181.3	181.3	183.0	186.2	184.5
64°	163.5	163.5	163.5	163.5	165.1	165.1	168.3	170.0	171.6	173.3
65°	152.1	148.9	147.3	147.3	148.9	150.6	152.1	153.8	155.4	155.4
66°	139.2	136.0	134.4	134.4	134.4	134.4	137.6	137.6	140.9	140.9
67°	124.7	121.4	119.9	118.2	118.2	118.2	123.0	121.4	121.4	121.4
67.5°	119.9	114.9	113.4	111.7	110.0	113.4	111.7	113.4	113.4	111.7
68°	113.4	110.0	106.9	103.7	103.7	103.7	105.2	106.9	105.2	103.7
69°	100.4	98.7	93.9	90.7	89.0	90.7	89.0	90.7	89.0	90.7
70°	89.0	84.2	79.3	77.7	76.1	76.1	76.1	74.5	76.1	74.5
71°	77.7	72.8	68.0	64.8	63.1	63.1	61.5	63.1	61.5	63.1
72°	66.4	61.5	55.1	51.8	51.8	51.8	51.8	50.2	51.8	50.2
72.5°	61.5	55.1	50.2	46.9	45.4	45.4	45.4	45.4	43.7	45.4
73°	56.6	50.2	43.7	42.1	42.1	42.1	40.4	38.9	40.4	40.4



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
77.5°	19.4	14.5	13.0	13.0	13.0	13.0	13.0	13.0	11.3	11.3
80°	8.0	6.5	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
82.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
85°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By 670245859 / DESKTOP-HRDQ47P





— 0°-180° - - 45°-225° - - - - 90°-270°







74°	105.2	105.2	102.0	97.2	89.0	81.0	74.5	68.0	59.9	51.8	48.6
75°	97.2	95.5	92.3	87.5	81.0	72.8	66.4	58.3	51.8	43.7	40.4





74°	46.9	38.9	35.6	32.4	32.4	32.4	30.7	30.7	30.7	32.4
75°	37.2	30.7	27.5	24.2	25.9	24.2	25.9	24.2	24.2	24.2



(END OF REPORT)