

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: P584641

Luminaire Tested: **HC840D010-HM82555940-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584641
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-16)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC840D010-HM82555940-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4489.3 lumens
Efficiency: N/A
Efficacy: 109.5 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.04 / 1.13
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

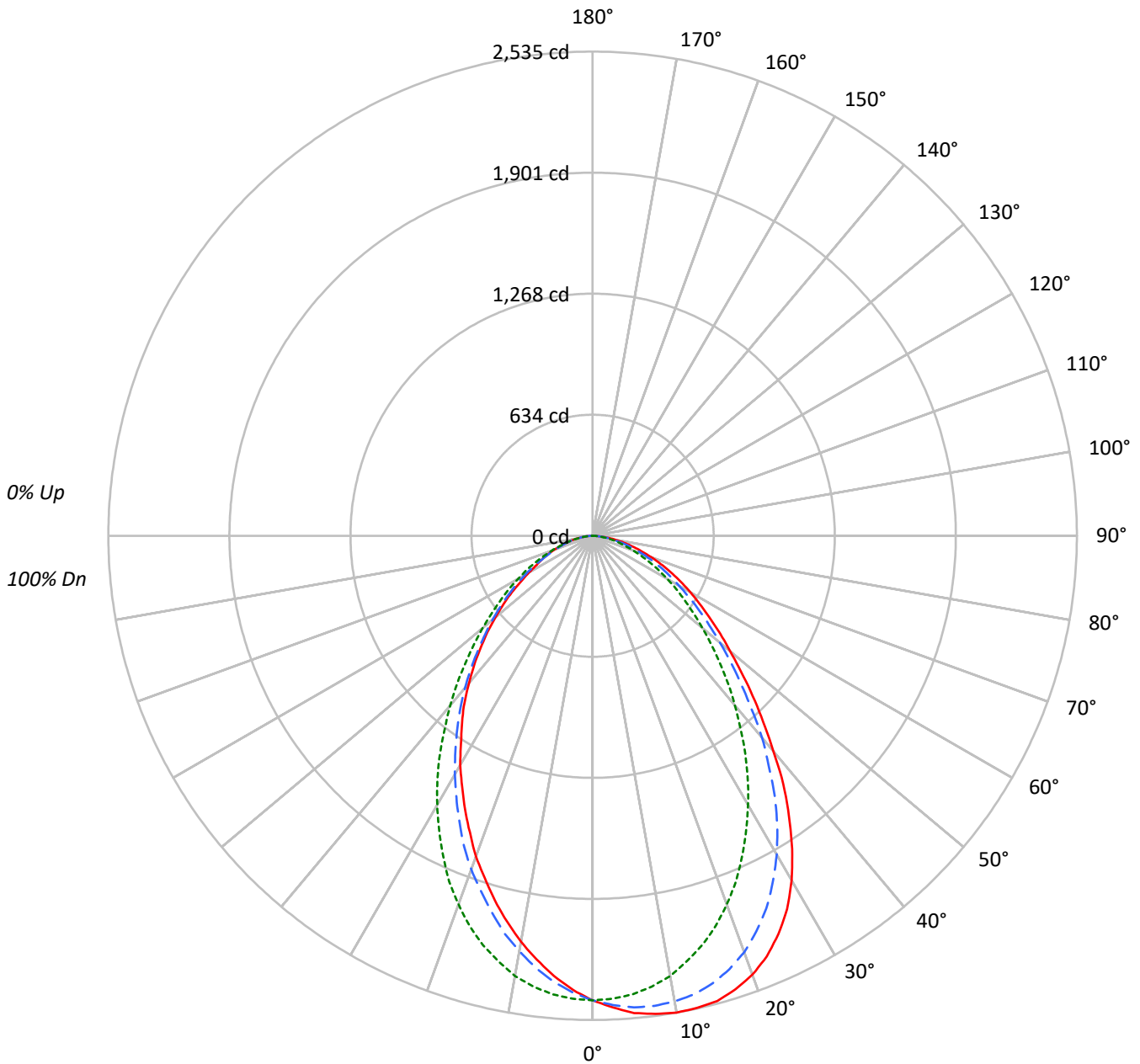
Input Watts (W): 41
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87								
2	102	95	89	84	99	93	88	83	90	85	81	86	83	79	83	80	78	76								
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66								
4	87	76	69	63	85	75	68	62	73	67	62	71	65	61	68	64	60	58								
5	81	69	61	55	79	68	61	55	66	60	54	64	59	54	63	57	53	51								
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46								
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41								
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38								
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34								
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	75009	75009	75009
5°	77645	74581	71619
10°	79370	73273	67587
15°	80500	70808	63117
20°	80256	67370	58595
25°	78272	62999	53792
30°	74155	57939	49358
35°	67470	52435	44853
40°	59254	46634	40520
45°	51672	41023	36130
50°	44970	35941	31825
55°	40101	31585	27682
60°	36436	27685	23608
65°	32754	24086	21430
70°	29158	20538	19348
75°	25568	17299	16513
80°	21682	14082	14650
85°	16346	10543	11676



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	227.8	5.1
10°-20°	627.8	14.0
20°-30°	871.4	19.4
30°-40°	900.9	20.1
40°-50°	754.4	16.8
50°-60°	547.6	12.2
60°-70°	345.6	7.7
70°-80°	171.2	3.8
80°-90°	42.6	0.9
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°	1727.0	38.5
0°-40°	2628.0	58.5
0°-60°	3930.0	87.5
0°-90°	4489.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4489.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2432	2432	2432	2432	2432	
5°	2508	2479	2409	2344	2314	240
15°	2522	2426	2218	2040	1977	710
25°	2300	2152	1852	1650	1581	1054
35°	1792	1660	1393	1234	1192	1116
45°	1185	1099	941	848	828	916
55°	746	680	588	538	515	673
65°	449	393	330	290	294	448
75°	215	178	145	139	139	230
85°	46	36	30	33	33	56
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5
2.5°	2472.1	2472.1	2475.4	2472.1	2472.1	2472.1	2468.8	2468.8	2465.6	2465.6	2458.9
5°	2508.4	2501.9	2508.4	2501.9	2501.9	2501.9	2498.5	2492.0	2488.6	2482.0	2478.8
7.5°	2524.9	2521.6	2521.6	2518.4	2518.4	2515.1	2511.7	2508.4	2495.2	2492.0	2482.0
10°	2534.8	2531.5	2531.5	2528.3	2521.6	2521.6	2515.1	2511.7	2495.2	2488.6	2475.4
12.5°	2531.5	2531.5	2531.5	2528.3	2518.4	2515.1	2508.4	2498.5	2485.3	2472.1	2458.9
15°	2521.6	2521.6	2515.1	2511.7	2501.9	2495.2	2492.0	2475.4	2462.2	2445.7	2425.9
17.5°	2488.6	2488.6	2485.3	2478.8	2468.8	2462.2	2455.7	2439.1	2425.9	2399.5	2379.8
20°	2445.7	2442.5	2439.1	2429.3	2419.3	2416.1	2406.1	2383.0	2366.6	2346.7	2320.3
22.5°	2383.0	2379.8	2376.4	2369.8	2353.3	2346.7	2340.1	2323.6	2293.8	2274.1	2241.1
25°	2300.5	2300.5	2293.8	2284.0	2267.5	2260.9	2251.0	2234.5	2208.0	2178.4	2152.0
27.5°	2204.8	2201.5	2191.6	2185.0	2171.8	2161.9	2145.3	2125.6	2099.2	2076.1	2043.1
30°	2082.6	2082.6	2076.1	2066.2	2049.7	2043.1	2029.9	2006.7	1980.4	1950.6	1927.6
32.5°	1944.0	1944.0	1934.1	1927.6	1917.7	1901.1	1897.8	1871.4	1848.3	1825.2	1798.8
35°	1792.3	1795.5	1788.9	1775.7	1759.2	1759.2	1752.6	1729.5	1703.1	1680.0	1660.2
37.5°	1640.4	1630.5	1627.2	1620.5	1610.7	1597.5	1590.9	1581.0	1557.8	1541.4	1511.7
40°	1472.0	1475.4	1468.7	1462.2	1458.8	1448.9	1445.6	1429.2	1412.6	1392.9	1379.7
42.5°	1320.2	1320.2	1320.2	1313.6	1307.0	1297.1	1293.8	1283.9	1264.1	1250.9	1231.1
45°	1184.9	1175.0	1175.0	1171.7	1168.5	1161.8	1151.9	1145.3	1132.0	1122.2	1099.1
47.5°	1052.9	1056.1	1052.9	1049.6	1039.7	1036.4	1033.0	1019.8	1006.6	996.7	980.3
50°	937.4	943.9	937.4	937.4	930.8	927.5	920.8	910.9	901.1	884.5	868.1
52.5°	841.7	841.7	838.4	835.0	825.1	818.6	815.3	811.9	795.4	782.2	769.0
55°	745.9	749.2	749.2	739.3	736.0	729.5	726.1	716.3	709.6	689.8	680.0
57.5°	663.4	660.1	663.4	656.8	650.2	643.7	640.3	633.7	623.8	610.6	597.4
60°	590.8	584.2	584.2	581.0	574.3	571.0	564.4	554.5	544.5	531.3	521.5
62.5°	518.2	514.9	511.6	508.2	501.7	498.4	495.0	485.2	475.3	465.4	455.5
65°	448.9	448.9	445.5	439.0	435.7	432.3	429.1	422.4	409.2	402.7	392.8
67.5°	386.2	382.8	382.8	376.3	369.6	366.4	366.4	359.7	349.9	340.0	333.3
70°	323.4	326.8	323.4	320.1	313.6	313.6	306.9	303.7	290.5	287.1	277.3
72.5°	267.4	267.4	264.1	264.1	257.4	254.2	254.2	247.5	241.0	234.3	227.8
75°	214.6	214.6	214.6	211.2	207.9	201.3	201.3	198.0	191.5	184.8	178.3
77.5°	168.4	165.1	165.1	161.7	158.4	155.2	155.2	151.8	145.2	142.0	135.3
80°	122.1	118.8	118.8	118.8	112.2	115.5	112.2	108.9	105.7	102.3	99.0
82.5°	79.3	82.5	82.5	79.3	75.9	75.9	75.9	72.6	72.6	69.3	66.0
85°	46.2	46.2	46.2	46.2	43.0	43.0	43.0	39.6	39.6	39.6	36.3
87.5°	19.8	19.8	19.8	19.8	19.8	19.8	16.5	16.5	16.5	16.5	16.5
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5
2.5°	2458.9	2452.4	2449.0	2445.7	2445.7	2442.5	2439.1	2432.5	2432.5	2425.9	2422.6
5°	2472.1	2462.2	2455.7	2449.0	2445.7	2439.1	2432.5	2422.6	2419.3	2409.4	2399.5
7.5°	2475.4	2458.9	2452.4	2439.1	2432.5	2425.9	2412.7	2402.8	2389.6	2379.8	2366.6
10°	2462.2	2449.0	2432.5	2416.1	2412.7	2402.8	2383.0	2369.8	2353.3	2340.1	2320.3
12.5°	2442.5	2422.6	2406.1	2386.3	2376.4	2366.6	2346.7	2326.9	2303.8	2280.8	2260.9
15°	2409.4	2386.3	2363.2	2340.1	2326.9	2317.0	2293.8	2270.8	2247.7	2218.0	2198.2
17.5°	2359.9	2333.5	2310.4	2280.8	2267.5	2257.5	2227.9	2201.5	2171.8	2142.1	2122.2
20°	2297.2	2264.2	2237.8	2204.8	2194.8	2178.4	2148.7	2118.9	2086.0	2053.0	2029.9
22.5°	2214.7	2181.6	2152.0	2118.9	2102.5	2086.0	2056.2	2019.9	1986.9	1960.5	1937.4
25°	2118.9	2089.3	2053.0	2023.2	2003.5	1983.6	1950.6	1920.9	1891.3	1851.6	1828.6
27.5°	2013.4	1977.1	1950.6	1911.0	1891.3	1878.1	1841.8	1802.1	1775.7	1739.4	1713.0
30°	1894.5	1861.5	1831.8	1792.3	1772.4	1759.2	1726.2	1689.9	1663.5	1627.2	1600.8
32.5°	1769.1	1732.8	1696.5	1670.0	1647.0	1633.8	1597.5	1574.4	1541.4	1511.7	1481.9
35°	1633.8	1597.5	1571.0	1534.7	1521.5	1508.3	1478.7	1448.9	1419.2	1392.9	1369.7
37.5°	1488.6	1462.2	1432.4	1406.1	1396.1	1382.9	1346.6	1320.2	1297.1	1270.7	1250.9
40°	1346.6	1323.5	1303.8	1277.3	1260.8	1250.9	1224.5	1201.4	1175.0	1158.5	1138.7
42.5°	1218.0	1191.5	1171.7	1151.9	1135.4	1125.5	1102.4	1085.9	1066.1	1049.6	1026.5
45°	1082.5	1069.3	1046.2	1029.8	1019.8	1006.6	990.2	970.3	953.9	940.7	924.2
47.5°	963.8	950.6	934.0	914.3	907.6	897.7	881.2	868.1	854.9	841.7	825.1
50°	854.9	838.4	825.1	811.9	805.4	795.4	779.0	772.3	762.4	749.2	739.3
52.5°	755.9	742.7	729.5	712.9	709.6	703.1	693.2	680.0	670.0	663.4	656.8
55°	666.8	653.5	643.7	630.5	627.1	620.5	607.3	600.7	594.0	587.5	581.0
57.5°	587.5	574.3	561.1	554.5	547.9	541.3	538.0	528.1	521.5	518.2	511.6
60°	514.9	501.7	491.8	481.8	478.6	475.3	468.7	462.1	455.5	448.9	445.5
62.5°	445.5	432.3	425.8	419.1	412.6	412.6	406.0	399.4	392.8	389.5	382.8
65°	382.8	376.3	366.4	356.4	353.2	353.2	343.3	340.0	336.7	330.1	323.4
67.5°	323.4	316.9	306.9	303.7	300.4	297.0	293.7	287.1	280.6	277.3	270.6
70°	270.6	264.1	257.4	254.2	250.9	247.5	241.0	237.6	231.1	227.8	224.4
72.5°	217.9	214.6	207.9	204.7	201.3	198.0	194.7	191.5	184.8	181.5	178.3
75°	174.9	171.6	165.1	161.7	158.4	158.4	155.2	148.5	145.2	145.2	142.0
77.5°	132.0	128.8	125.4	122.1	118.8	118.8	115.5	112.2	108.9	108.9	105.7
80°	95.7	92.5	89.1	89.1	89.1	85.8	82.5	82.5	79.3	79.3	75.9
82.5°	62.7	62.7	59.4	59.4	59.4	56.2	56.2	52.8	52.8	52.8	52.8
85°	36.3	36.3	36.3	33.0	33.0	33.0	33.0	33.0	33.0	29.8	33.0
87.5°	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	13.2	13.2	13.2
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5
2.5°	2419.3	2416.1	2409.4	2409.4	2402.8	2402.8	2399.5	2396.2	2393.0	2389.6	2386.3
5°	2396.2	2383.0	2376.4	2373.1	2366.6	2363.2	2353.3	2346.7	2343.5	2336.8	2330.3
7.5°	2353.3	2340.1	2326.9	2323.6	2320.3	2307.1	2297.2	2287.3	2280.8	2274.1	2267.5
10°	2303.8	2290.6	2274.1	2267.5	2260.9	2244.3	2231.1	2221.3	2208.0	2194.8	2191.6
12.5°	2244.3	2224.6	2204.8	2198.2	2188.3	2171.8	2158.5	2142.1	2132.1	2115.7	2112.4
15°	2175.1	2152.0	2135.5	2118.9	2112.4	2095.8	2072.7	2059.5	2039.8	2033.1	2016.7
17.5°	2092.6	2069.4	2046.3	2039.8	2029.9	2006.7	1983.6	1967.2	1947.3	1937.4	1927.6
20°	2006.7	1977.1	1954.0	1947.3	1934.1	1914.4	1891.3	1874.7	1858.2	1838.4	1828.6
22.5°	1907.7	1874.7	1855.0	1838.4	1835.1	1812.0	1785.6	1772.4	1759.2	1742.8	1729.5
25°	1798.8	1769.1	1746.0	1732.8	1726.2	1706.3	1686.6	1670.0	1650.3	1640.4	1623.9
27.5°	1686.6	1666.8	1637.1	1623.9	1614.0	1597.5	1574.4	1564.5	1544.6	1531.4	1521.5
30°	1577.7	1548.0	1531.4	1515.0	1505.1	1488.6	1468.7	1458.8	1442.4	1429.2	1419.2
32.5°	1458.8	1439.1	1416.0	1409.3	1396.1	1379.7	1366.5	1349.9	1336.7	1323.5	1320.2
35°	1349.9	1323.5	1300.4	1293.8	1283.9	1267.5	1260.8	1250.9	1234.4	1231.1	1218.0
37.5°	1231.1	1218.0	1191.5	1181.6	1178.3	1165.1	1151.9	1145.3	1135.4	1125.5	1122.2
40°	1118.8	1102.4	1089.2	1079.3	1072.7	1062.8	1049.6	1046.2	1039.7	1026.5	1023.2
42.5°	1013.3	996.7	983.5	980.3	970.3	960.4	953.9	943.9	940.7	937.4	930.8
45°	910.9	901.1	887.9	884.5	881.2	868.1	861.4	854.9	848.2	844.9	838.4
47.5°	818.6	808.6	798.7	795.4	788.9	785.5	775.6	772.3	762.4	759.1	755.9
50°	729.5	722.8	716.3	712.9	706.3	703.1	696.4	689.8	683.2	680.0	676.6
52.5°	650.2	643.7	637.0	633.7	630.5	623.8	617.3	610.6	607.3	604.0	600.7
55°	574.3	567.7	564.4	561.1	557.8	554.5	544.5	541.3	538.0	534.7	528.1
57.5°	505.0	498.4	491.8	491.8	488.5	485.2	478.6	472.0	472.0	465.4	458.7
60°	442.3	435.7	429.1	425.8	422.4	415.9	412.6	409.2	406.0	402.7	396.0
62.5°	376.3	372.9	366.4	366.4	359.7	356.4	353.2	349.9	346.5	340.0	336.7
65°	320.1	316.9	310.2	306.9	306.9	303.7	297.0	293.7	290.5	290.5	287.1
67.5°	267.4	264.1	257.4	254.2	254.2	250.9	247.5	247.5	244.2	241.0	244.2
70°	221.1	214.6	214.6	211.2	211.2	207.9	204.7	204.7	204.7	207.9	207.9
72.5°	174.9	171.6	168.4	168.4	168.4	168.4	165.1	165.1	168.4	171.6	171.6
75°	138.6	135.3	135.3	135.3	132.0	132.0	135.3	135.3	138.6	138.6	138.6
77.5°	102.3	102.3	102.3	102.3	102.3	102.3	105.7	105.7	108.9	108.9	108.9
80°	75.9	75.9	75.9	75.9	75.9	79.3	79.3	79.3	79.3	79.3	82.5
82.5°	52.8	52.8	52.8	52.8	52.8	52.8	52.8	56.2	56.2	56.2	56.2
85°	29.8	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
87.5°	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P584641

CATALOG NUMBER: HC840D010-HM82555940-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5	2432.5
2.5°	2383.0	2383.0	2383.0	2386.3	2379.8	2379.8	2379.8	2379.8
5°	2326.9	2323.6	2320.3	2323.6	2317.0	2317.0	2313.7	2313.7
7.5°	2257.5	2254.3	2251.0	2251.0	2244.3	2244.3	2241.1	2237.8
10°	2181.6	2175.1	2178.4	2171.8	2168.5	2165.2	2161.9	2158.5
12.5°	2099.2	2092.6	2089.3	2082.6	2076.1	2072.7	2076.1	2069.4
15°	2010.0	2000.2	1996.8	1990.3	1983.6	1980.4	1980.4	1977.1
17.5°	1911.0	1904.5	1901.1	1894.5	1891.3	1884.6	1881.3	1878.1
20°	1818.6	1802.1	1805.5	1798.8	1795.5	1782.3	1782.3	1785.6
22.5°	1716.3	1706.3	1699.8	1693.3	1689.9	1683.3	1683.3	1680.0
25°	1614.0	1604.1	1600.8	1594.1	1590.9	1584.2	1581.0	1581.0
27.5°	1515.0	1501.8	1501.8	1495.1	1488.6	1485.2	1481.9	1478.7
30°	1409.3	1399.4	1396.1	1396.1	1392.9	1392.9	1382.9	1386.2
32.5°	1310.3	1303.8	1300.4	1293.8	1293.8	1290.6	1290.6	1280.7
35°	1211.3	1201.4	1204.8	1198.1	1194.8	1191.5	1194.8	1191.5
37.5°	1115.6	1109.0	1109.0	1102.4	1102.4	1099.1	1095.8	1102.4
40°	1019.8	1016.6	1013.3	1010.0	1013.3	1010.0	1003.4	1006.6
42.5°	924.2	924.2	920.8	920.8	917.6	917.6	917.6	917.6
45°	838.4	835.0	835.0	831.7	831.7	831.7	831.7	828.5
47.5°	752.6	749.2	749.2	749.2	745.9	745.9	742.7	745.9
50°	670.0	670.0	666.8	666.8	670.0	666.8	663.4	663.4
52.5°	594.0	594.0	590.8	590.8	587.5	584.2	587.5	587.5
55°	524.8	521.5	518.2	518.2	514.9	511.6	511.6	514.9
57.5°	458.7	455.5	452.2	452.2	445.5	442.3	442.3	442.3
60°	396.0	389.5	389.5	386.2	386.2	382.8	382.8	382.8
62.5°	336.7	333.3	333.3	333.3	333.3	330.1	330.1	330.1
65°	287.1	287.1	287.1	290.5	290.5	293.7	293.7	293.7
67.5°	247.5	250.9	250.9	250.9	254.2	254.2	254.2	250.9
70°	211.2	211.2	211.2	214.6	214.6	214.6	214.6	214.6
72.5°	174.9	174.9	174.9	174.9	174.9	174.9	174.9	174.9
75°	138.6	142.0	142.0	142.0	138.6	142.0	142.0	138.6
77.5°	108.9	108.9	108.9	108.9	108.9	108.9	108.9	108.9
80°	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5
82.5°	56.2	56.2	56.2	56.2	56.2	56.2	56.2	56.2
85°	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
87.5°	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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













(END OF REPORT)