

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: P593902

Luminaire Tested: **HC880D010-HM86080850-81RWWC**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P593902
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-14)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC880D010-HM86080850-81RWWC
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7415.7 lumens
Efficiency: N/A
Efficacy: 105.9 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.08 / 1.17
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

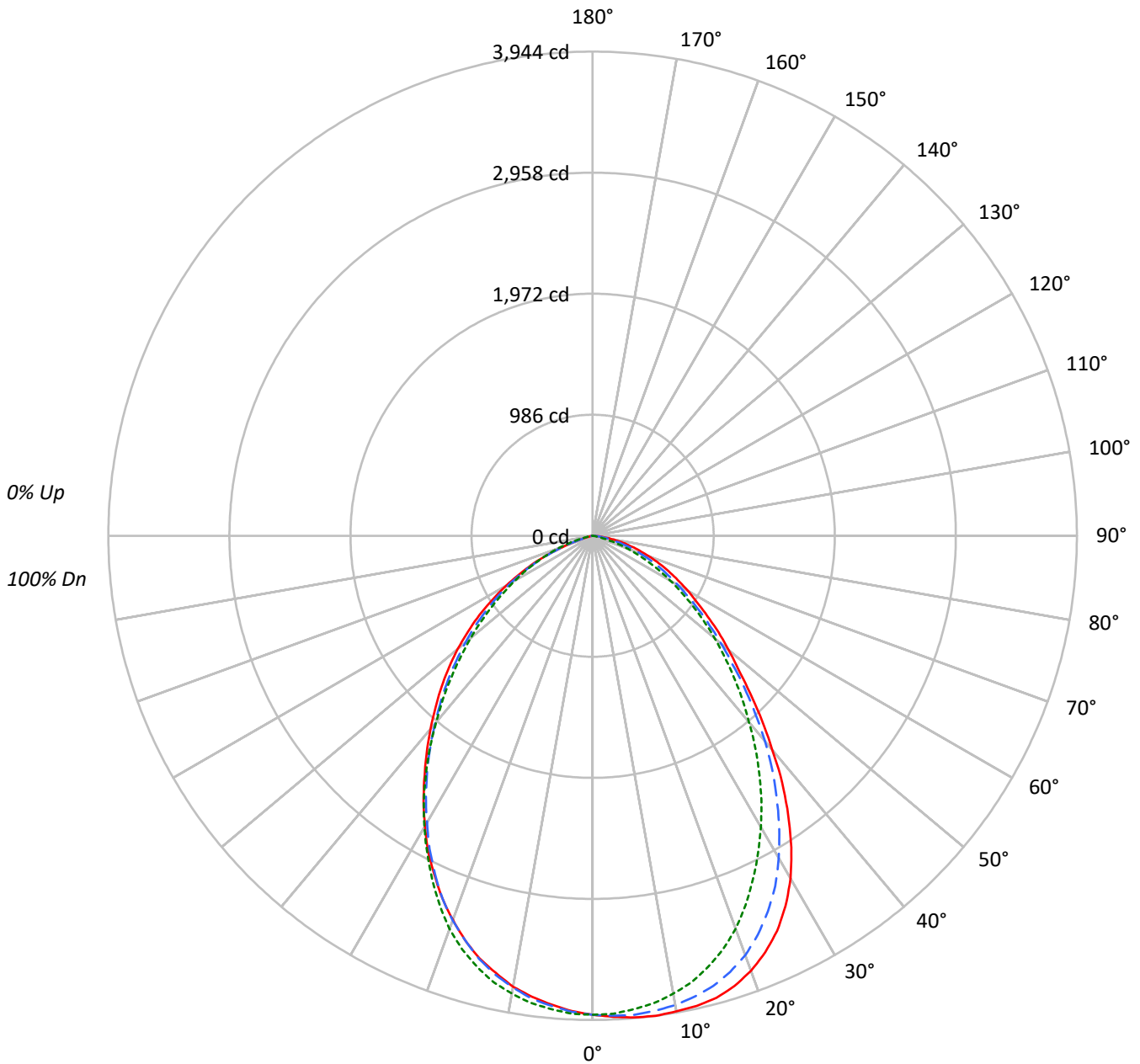
Input Watts (W): 70
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				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	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88				88
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	84	82	79	77				77
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67				67
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59				59
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52				52
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47				47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42				42
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38				38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35				35
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32				32

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	120317	120317	120317
5°	121907	119811	118678
10°	123153	118585	116791
15°	124395	116082	113752
20°	123766	111802	109236
25°	120884	105104	103688
30°	114817	97570	97196
35°	104523	89029	89812
40°	91638	79687	82621
45°	79059	70882	75880
50°	69225	62226	68726
55°	61331	53493	60498
60°	55259	44978	50121
65°	49799	36110	38387
70°	43682	26308	21142
75°	37244	13654	5576
80°	28679	3694	923
85°	18433	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	368.1	5.0
10°-20°	1034.9	14.0
20°-30°	1468.9	19.8
30°-40°	1546.2	20.9
40°-50°	1315.4	17.7
50°-60°	950.5	12.8
60°-70°	540.6	7.3
70°-80°	170.3	2.3
80°-90°	20.7	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°	2871.9	38.7
0°-40°	4418.1	59.6
0°-60°	6684.0	90.1
0°-90°	7415.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7415.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3902	3902	3902	3902	3902	
5°	3938	3917	3871	3844	3834	376
15°	3897	3798	3636	3568	3563	1097
25°	3553	3376	3089	3037	3048	1627
35°	2777	2615	2365	2350	2386	1728
45°	1813	1745	1625	1667	1740	1409
55°	1141	1058	995	1052	1125	1029
65°	682	589	495	490	526	677
75°	313	240	115	52	47	336
85°	52	31	0	0	0	67
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°	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8
2.5°	3922.6	3927.9	3917.4	3917.4	3927.9	3917.4	3922.6	3922.6	3917.4	3917.4	3912.3
5°	3938.3	3933.1	3933.1	3933.1	3938.3	3927.9	3922.6	3927.9	3917.4	3917.4	3917.4
7.5°	3943.6	3943.6	3938.3	3933.1	3933.1	3933.1	3927.9	3922.6	3917.4	3907.1	3901.8
10°	3933.1	3933.1	3938.3	3927.9	3927.9	3917.4	3917.4	3907.1	3907.1	3896.6	3881.0
12.5°	3922.6	3917.4	3917.4	3907.1	3907.1	3896.6	3896.6	3881.0	3875.8	3860.1	3844.5
15°	3896.6	3891.4	3881.0	3875.8	3870.6	3865.3	3855.0	3849.7	3834.0	3813.2	3797.7
17.5°	3844.5	3839.3	3834.0	3823.7	3813.2	3808.0	3802.9	3787.2	3766.4	3750.7	3724.7
20°	3771.6	3766.4	3766.4	3750.7	3745.6	3729.9	3724.7	3703.9	3688.3	3657.0	3636.2
22.5°	3672.6	3677.8	3667.4	3657.0	3646.5	3631.0	3620.5	3599.7	3573.7	3542.4	3516.3
25°	3552.9	3558.0	3547.6	3537.2	3521.6	3511.1	3500.7	3469.5	3443.3	3407.0	3375.7
27.5°	3401.7	3401.7	3401.7	3391.3	3365.2	3360.0	3349.7	3318.4	3281.9	3250.6	3219.3
30°	3224.6	3219.3	3219.3	3203.8	3193.3	3172.5	3156.9	3130.9	3104.8	3068.3	3031.8
32.5°	3011.0	3016.3	3000.6	2990.2	2974.5	2974.5	2953.7	2932.9	2901.6	2865.1	2828.7
35°	2776.6	2781.8	2771.4	2766.2	2740.2	2734.9	2729.7	2703.7	2682.9	2656.8	2615.1
37.5°	2537.0	2531.7	2526.5	2526.5	2510.9	2500.5	2490.1	2474.4	2443.2	2422.3	2401.5
40°	2276.5	2276.5	2276.5	2271.3	2266.1	2255.7	2250.4	2240.1	2219.1	2198.3	2182.8
42.5°	2042.1	2042.1	2036.9	2031.6	2021.2	2026.4	2016.1	2005.6	1984.8	1969.1	1958.8
45°	1812.9	1812.9	1812.9	1818.1	1807.6	1792.1	1792.1	1781.6	1771.1	1760.8	1745.1
47.5°	1609.7	1625.4	1614.9	1609.7	1614.9	1594.1	1594.1	1583.6	1573.3	1562.8	1542.0
50°	1443.0	1443.0	1443.0	1432.6	1427.4	1427.4	1411.7	1401.4	1396.1	1385.7	1364.9
52.5°	1292.0	1281.5	1281.5	1276.3	1271.0	1260.7	1260.7	1250.2	1229.4	1219.0	1203.4
55°	1140.8	1140.8	1135.6	1130.4	1125.3	1120.0	1114.8	1099.2	1088.8	1073.1	1057.5
57.5°	1005.4	1015.9	1010.6	1000.2	989.7	989.7	979.4	968.9	953.3	937.6	922.1
60°	896.0	890.8	890.8	885.6	875.2	870.0	864.8	849.2	833.5	817.9	802.2
62.5°	781.4	781.4	781.4	770.9	760.6	755.4	750.1	739.7	718.9	703.3	692.8
65°	682.5	677.3	672.0	666.8	661.6	651.2	646.0	635.5	619.9	604.2	588.7
67.5°	583.4	578.2	578.2	573.0	557.4	552.2	552.2	536.6	520.9	505.3	489.6
70°	484.5	484.5	484.5	474.1	468.8	463.6	458.5	448.0	432.3	416.7	401.2
72.5°	401.2	395.9	395.9	390.7	375.1	369.9	364.7	354.2	338.6	328.2	317.8
75°	312.6	312.6	307.4	302.1	296.9	291.8	286.5	276.1	260.5	244.8	239.6
77.5°	239.6	234.5	234.5	229.2	218.8	213.5	213.5	203.2	187.5	177.2	166.7
80°	161.5	166.7	161.5	156.2	151.1	145.9	140.7	135.4	125.1	114.6	104.2
82.5°	98.9	104.2	98.9	98.9	93.8	88.6	88.6	78.1	72.9	67.8	62.5
85°	52.1	52.1	52.1	52.1	46.8	46.8	46.8	41.7	36.5	31.3	31.3
87.5°	15.6	20.8	15.6	15.6	15.6	15.6	15.6	15.6	10.5	10.5	10.5
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°	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8
2.5°	3917.4	3912.3	3907.1	3907.1	3907.1	3907.1	3907.1	3901.8	3896.6	3896.6	3896.6
5°	3907.1	3907.1	3907.1	3901.8	3896.6	3896.6	3886.2	3881.0	3875.8	3870.6	3865.3
7.5°	3896.6	3886.2	3881.0	3875.8	3870.6	3870.6	3860.1	3849.7	3849.7	3839.3	3828.9
10°	3865.3	3860.1	3849.7	3839.3	3834.0	3828.9	3818.5	3802.9	3797.7	3787.2	3776.7
12.5°	3828.9	3818.5	3808.0	3787.2	3782.0	3776.7	3755.9	3740.4	3729.9	3724.7	3698.6
15°	3782.0	3761.2	3745.6	3719.5	3714.3	3703.9	3688.3	3672.6	3651.8	3636.2	3625.7
17.5°	3698.6	3677.8	3651.8	3625.7	3615.3	3615.3	3589.2	3568.4	3542.4	3531.9	3511.1
20°	3599.7	3573.7	3552.9	3521.6	3505.9	3490.3	3474.6	3443.3	3422.5	3407.0	3380.9
22.5°	3485.1	3448.6	3422.5	3391.3	3365.2	3349.7	3323.6	3297.6	3271.5	3255.8	3235.0
25°	3339.2	3307.9	3266.3	3235.0	3219.3	3198.5	3167.3	3141.2	3115.2	3089.1	3078.8
27.5°	3177.7	3136.0	3099.6	3063.1	3047.5	3031.8	2995.4	2964.2	2943.3	2917.2	2906.9
30°	3000.6	2958.9	2917.2	2885.9	2870.4	2844.3	2823.5	2787.0	2761.0	2740.2	2714.1
32.5°	2797.5	2766.2	2729.7	2682.9	2672.4	2651.6	2620.3	2604.7	2573.5	2557.8	2537.0
35°	2578.6	2557.8	2521.4	2484.9	2469.2	2458.9	2432.8	2401.5	2380.7	2365.0	2354.7
37.5°	2370.3	2344.2	2307.7	2281.7	2271.3	2255.7	2224.4	2208.8	2187.9	2177.5	2156.7
40°	2146.3	2120.2	2094.2	2078.5	2062.9	2052.5	2031.6	2016.1	1995.1	1979.6	1974.3
42.5°	1927.5	1911.8	1891.0	1870.2	1864.9	1849.4	1838.9	1823.3	1807.6	1802.4	1786.8
45°	1729.5	1713.9	1693.0	1672.2	1667.0	1656.6	1651.4	1635.7	1625.4	1625.4	1625.4
47.5°	1531.6	1516.0	1495.0	1484.7	1489.9	1469.0	1469.0	1463.8	1453.4	1453.4	1458.7
50°	1354.4	1333.6	1328.4	1318.0	1307.5	1297.1	1302.3	1286.7	1286.7	1297.1	1292.0
52.5°	1187.7	1166.9	1161.7	1151.3	1146.1	1146.1	1140.8	1140.8	1135.6	1140.8	1140.8
55°	1036.7	1021.0	1010.6	1000.2	995.0	995.0	995.0	989.7	984.6	995.0	1000.2
57.5°	901.3	896.0	885.6	870.0	864.8	859.5	854.3	854.3	854.3	854.3	859.5
60°	781.4	770.9	760.6	744.9	744.9	739.7	734.6	729.3	729.3	729.3	729.3
62.5°	677.3	661.6	646.0	635.5	630.3	625.2	619.9	609.5	609.5	609.5	609.5
65°	573.0	557.4	546.9	536.6	526.1	526.1	515.7	510.6	500.1	494.9	484.5
67.5°	474.1	463.6	453.2	437.6	432.3	427.2	416.7	411.5	395.9	390.7	385.5
70°	385.5	369.9	359.4	349.0	343.9	333.4	322.9	312.6	302.1	291.8	281.3
72.5°	302.1	286.5	276.1	265.6	255.3	255.3	239.6	229.2	213.5	203.2	187.5
75°	224.0	208.4	198.0	182.3	177.2	171.9	156.2	145.9	130.2	114.6	104.2
77.5°	151.1	140.7	130.2	114.6	104.2	104.2	88.6	78.1	67.8	52.1	46.8
80°	93.8	83.3	72.9	62.5	62.5	52.1	46.8	36.5	26.0	20.8	15.6
82.5°	52.1	46.8	41.7	31.3	31.3	26.0	20.8	15.6	10.5	5.2	5.2
85°	26.0	20.8	15.6	15.6	10.5	10.5	10.5	5.2	5.2	0.0	0.0
87.5°	10.5	5.2	5.2	5.2	5.2	5.2	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	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8
2.5°	3891.4	3891.4	3886.2	3886.2	3886.2	3881.0	3886.2	3881.0	3881.0	3881.0	3886.2
5°	3870.6	3860.1	3860.1	3855.0	3855.0	3849.7	3855.0	3849.7	3844.5	3839.3	3844.5
7.5°	3828.9	3818.5	3813.2	3808.0	3808.0	3808.0	3802.9	3797.7	3802.9	3787.2	3797.7
10°	3771.6	3766.4	3755.9	3750.7	3745.6	3750.7	3745.6	3735.1	3735.1	3735.1	3729.9
12.5°	3698.6	3688.3	3683.0	3677.8	3667.4	3667.4	3672.6	3662.2	3662.2	3651.8	3651.8
15°	3610.0	3599.7	3589.2	3589.2	3578.9	3578.9	3573.7	3573.7	3568.4	3563.2	3563.2
17.5°	3500.7	3485.1	3474.6	3479.8	3474.6	3469.5	3469.5	3459.0	3453.8	3459.0	3459.0
20°	3370.5	3360.0	3349.7	3354.9	3344.4	3339.2	3344.4	3328.8	3334.0	3334.0	3334.0
22.5°	3224.6	3219.3	3203.8	3203.8	3193.3	3188.2	3193.3	3193.3	3198.5	3193.3	3193.3
25°	3063.1	3052.6	3042.3	3042.3	3037.1	3031.8	3037.1	3042.3	3037.1	3042.3	3042.3
27.5°	2891.2	2875.6	2875.6	2865.1	2865.1	2870.4	2865.1	2870.4	2875.6	2875.6	2885.9
30°	2703.7	2698.4	2693.2	2688.1	2688.1	2693.2	2693.2	2693.2	2698.4	2708.9	2708.9
32.5°	2526.5	2516.2	2505.7	2505.7	2516.2	2510.9	2516.2	2516.2	2526.5	2526.5	2537.0
35°	2333.8	2333.8	2323.4	2328.5	2328.5	2328.5	2328.5	2339.0	2349.5	2354.7	2365.0
37.5°	2156.7	2141.0	2146.3	2146.3	2151.5	2146.3	2161.8	2161.8	2172.3	2172.3	2182.8
40°	1964.0	1964.0	1969.1	1964.0	1969.1	1969.1	1979.6	1990.0	1995.1	2005.6	2010.8
42.5°	1781.6	1792.1	1781.6	1786.8	1792.1	1797.3	1802.4	1807.6	1828.4	1838.9	1854.5
45°	1614.9	1620.1	1625.4	1630.5	1625.4	1635.7	1640.9	1651.4	1667.0	1672.2	1677.4
47.5°	1453.4	1458.7	1463.8	1469.0	1469.0	1479.5	1484.7	1495.0	1505.5	1510.7	1516.0
50°	1297.1	1307.5	1312.8	1312.8	1318.0	1328.4	1338.8	1338.8	1349.3	1364.9	1370.1
52.5°	1156.5	1156.5	1166.9	1172.1	1177.3	1177.3	1192.9	1198.2	1203.4	1213.7	1224.2
55°	1000.2	1015.9	1021.0	1021.0	1031.5	1041.9	1047.0	1052.3	1052.3	1073.1	1073.1
57.5°	864.8	870.0	880.3	880.3	880.3	896.0	896.0	906.4	911.6	916.8	927.3
60°	729.3	739.7	739.7	744.9	739.7	750.1	755.4	765.8	770.9	776.2	781.4
62.5°	604.2	604.2	609.5	609.5	609.5	609.5	619.9	619.9	630.3	635.5	640.8
65°	484.5	484.5	484.5	484.5	484.5	484.5	484.5	484.5	489.6	489.6	500.1
67.5°	375.1	369.9	359.4	364.7	359.4	359.4	354.2	354.2	359.4	359.4	369.9
70°	270.9	265.6	255.3	255.3	250.0	244.8	239.6	234.5	229.2	229.2	229.2
72.5°	177.2	166.7	151.1	145.9	145.9	135.4	125.1	119.9	119.9	119.9	119.9
75°	88.6	78.1	67.8	62.5	62.5	52.1	57.3	52.1	52.1	52.1	52.1
77.5°	36.5	26.0	20.8	20.8	20.8	15.6	15.6	15.6	15.6	15.6	15.6
80°	10.5	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
82.5°	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	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	0.0



TEST NUMBER: P593902

CATALOG NUMBER: HC880D010-HM86080850-81RWWC

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8	3901.8
2.5°	3881.0	3881.0	3870.6	3875.8	3875.8	3875.8	3875.8	3875.8
5°	3834.0	3839.3	3834.0	3839.3	3839.3	3834.0	3834.0	3834.0
7.5°	3787.2	3792.4	3787.2	3792.4	3792.4	3792.4	3787.2	3787.2
10°	3729.9	3729.9	3729.9	3729.9	3729.9	3724.7	3729.9	3729.9
12.5°	3651.8	3651.8	3651.8	3657.0	3657.0	3651.8	3651.8	3646.5
15°	3568.4	3558.0	3563.2	3568.4	3563.2	3563.2	3563.2	3563.2
17.5°	3453.8	3459.0	3453.8	3453.8	3453.8	3453.8	3459.0	3453.8
20°	3334.0	3334.0	3339.2	3334.0	3334.0	3334.0	3334.0	3328.8
22.5°	3198.5	3193.3	3193.3	3198.5	3198.5	3193.3	3198.5	3198.5
25°	3047.5	3052.6	3047.5	3047.5	3052.6	3052.6	3052.6	3047.5
27.5°	2885.9	2891.2	2896.4	2891.2	2891.2	2891.2	2896.4	2901.6
30°	2719.2	2729.7	2719.2	2719.2	2729.7	2724.5	2729.7	2729.7
32.5°	2542.2	2557.8	2547.4	2557.8	2557.8	2563.0	2557.8	2563.0
35°	2365.0	2380.7	2380.7	2380.7	2385.8	2391.1	2391.1	2385.8
37.5°	2198.3	2203.6	2203.6	2214.0	2219.1	2224.4	2224.4	2219.1
40°	2026.4	2036.9	2042.1	2042.1	2042.1	2052.5	2062.9	2052.5
42.5°	1859.7	1864.9	1870.2	1870.2	1880.6	1885.8	1891.0	1891.0
45°	1698.2	1708.7	1713.9	1719.1	1724.3	1734.8	1729.5	1740.0
47.5°	1531.6	1547.1	1552.4	1557.6	1568.1	1573.3	1578.4	1583.6
50°	1380.4	1390.9	1390.9	1401.4	1416.9	1416.9	1427.4	1432.6
52.5°	1229.4	1234.7	1239.9	1245.0	1255.5	1265.9	1265.9	1276.3
55°	1083.5	1088.8	1088.8	1094.0	1099.2	1120.0	1125.3	1125.3
57.5°	932.5	932.5	942.9	948.1	953.3	963.7	963.7	963.7
60°	786.6	791.9	791.9	797.0	802.2	812.7	817.9	812.7
62.5°	640.8	646.0	646.0	651.2	661.6	666.8	661.6	661.6
65°	505.3	510.6	510.6	515.7	526.1	526.1	520.9	526.1
67.5°	369.9	369.9	369.9	369.9	369.9	369.9	369.9	369.9
70°	234.5	229.2	224.0	229.2	229.2	229.2	224.0	234.5
72.5°	114.6	119.9	119.9	119.9	119.9	119.9	119.9	114.6
75°	52.1	52.1	46.8	46.8	46.8	52.1	52.1	46.8
77.5°	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
80°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	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



Report Generated By 670245859 / DESKTOP-HRDQ47P





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













(END OF REPORT)