

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: P583981

Luminaire Tested: **HC820D010-HM80520827-81WWBB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P583981
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-17)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC820D010-HM80520827-81WWBB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1813.9 lumens
Efficiency: N/A
Efficacy: 90.7 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.07 / 1.16
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

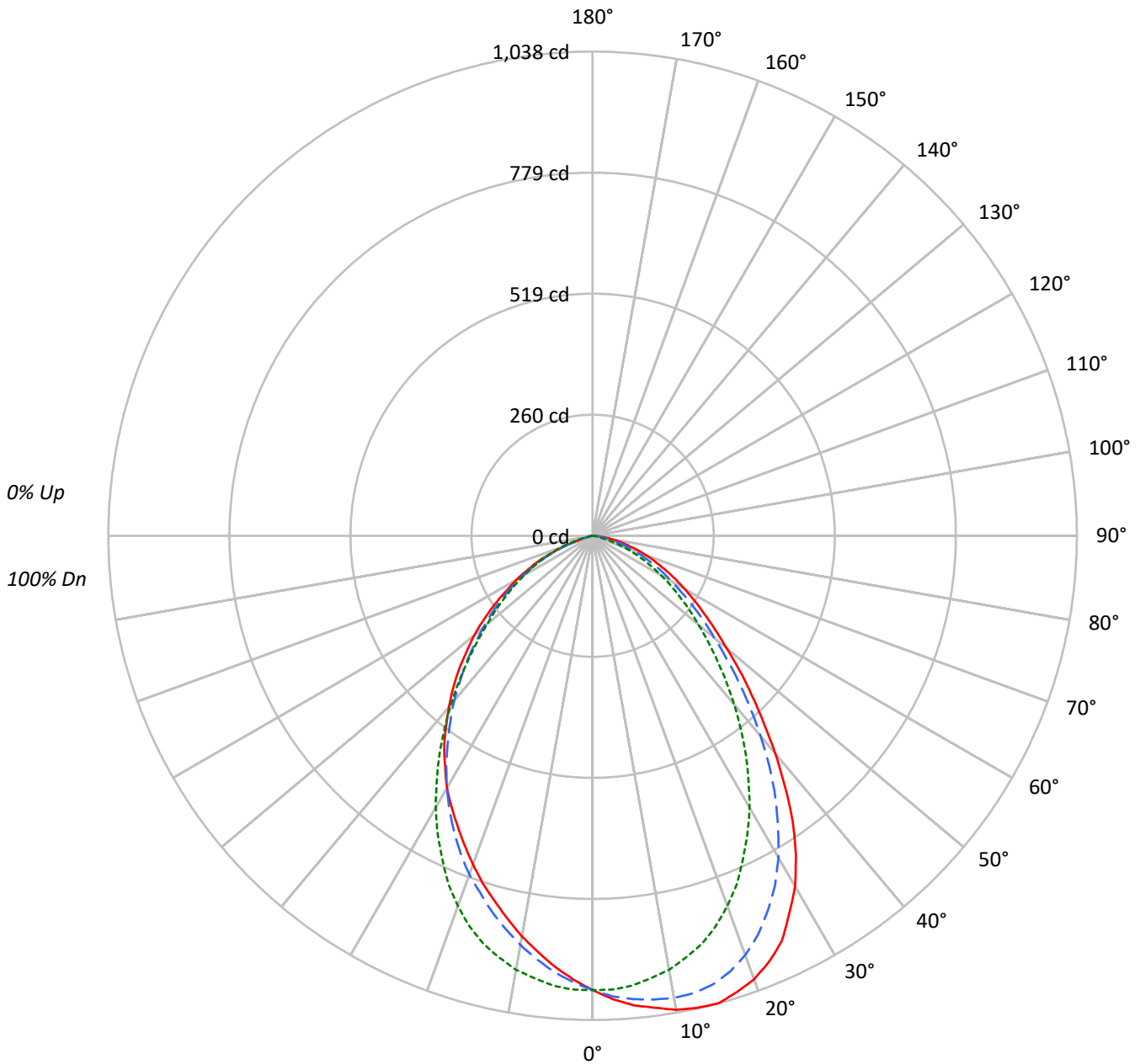
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77				77
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67				67
4	88	78	70	64	86	76	69	64	74	68	63	72	66	62	70	65	61	59				59
5	82	70	63	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53				53
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	58	53	49	47				47
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	49	44	43				43
8	66	54	46	41	65	53	46	41	52	46	41	51	45	41	50	44	40	39				39
9	62	50	43	37	61	50	42	37	48	42	37	47	41	37	46	41	37	35				35
10	59	47	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32				32

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	30028	30028	30028
5°	31273	29967	28704
10°	32314	29580	27304
15°	33134	28904	25881
20°	33199	27706	24598
25°	32639	25950	23327
30°	30892	23949	22236
35°	28165	21536	20877
40°	24495	18984	19278
45°	21011	16445	17649
50°	17947	14176	15855
55°	15725	12209	13768
60°	14006	10417	11582
65°	12426	8493	9237
70°	11017	6302	5256
75°	9198	3300	1561
80°	7245	1030	249
85°	5130	495	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	91.8	5.1
10°-20°	257.2	14.2
20°-30°	364.0	20.1
30°-40°	380.8	21.0
40°-50°	317.6	17.5
50°-60°	225.3	12.4
60°-70°	129.7	7.2
70°-80°	41.7	2.3
80°-90°	5.7	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°	713.0	39.3
0°-40°	1093.8	60.3
0°-60°	1636.7	90.2
0°-90°	1813.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1813.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	974	974	974	974	974	
5°	1010	997	968	939	927	97
15°	1038	996	905	834	811	292
25°	959	888	763	702	686	438
35°	748	683	572	542	555	464
45°	482	442	377	381	405	373
55°	292	262	227	239	256	264
65°	170	143	116	116	127	170
75°	77	57	28	13	13	84
85°	14	7	1	0	0	18
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°	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8
2.5°	994.2	992.8	991.3	992.8	991.3	992.8	991.3	991.3	989.8	988.4	988.4
5°	1010.3	1008.7	1008.7	1008.7	1007.3	1005.9	1005.9	1004.3	1001.5	1000.0	997.1
7.5°	1020.4	1021.8	1021.8	1021.8	1019.0	1019.0	1016.0	1013.1	1010.3	1007.3	1002.9
10°	1032.0	1032.0	1030.6	1029.2	1026.2	1024.8	1023.3	1020.4	1016.0	1010.3	1005.9
12.5°	1036.4	1036.4	1035.0	1032.0	1030.6	1029.2	1027.6	1023.3	1017.5	1010.3	1004.3
15°	1037.9	1035.0	1033.5	1032.0	1029.2	1024.8	1024.8	1019.0	1011.7	1002.9	995.6
17.5°	1026.2	1027.6	1024.8	1021.8	1017.5	1014.6	1010.3	1005.9	997.1	987.0	979.6
20°	1011.7	1010.3	1008.7	1004.3	998.6	997.1	992.8	985.4	978.2	966.5	956.4
22.5°	988.4	987.0	984.0	981.1	975.3	972.3	968.1	959.3	949.0	937.4	925.7
25°	959.3	956.4	952.0	946.2	941.8	938.9	933.1	924.3	912.7	899.6	887.9
27.5°	912.7	917.0	914.2	905.4	901.0	895.2	893.7	882.1	872.0	858.8	845.7
30°	867.6	867.6	863.2	858.8	851.5	847.1	841.3	832.6	822.4	806.5	796.2
32.5°	810.7	809.3	803.5	802.1	796.2	787.4	786.0	774.4	764.2	752.6	739.5
35°	748.2	745.3	739.5	735.1	732.1	727.9	723.5	713.2	703.1	691.5	682.7
37.5°	676.8	676.8	675.4	668.2	665.2	662.3	657.9	647.7	641.9	630.2	621.6
40°	608.5	607.0	602.6	601.2	598.2	594.0	591.0	585.2	576.5	567.7	559.0
42.5°	541.5	543.0	537.1	538.6	532.7	529.9	528.4	519.6	515.4	506.6	499.3
45°	481.8	480.4	477.4	476.0	473.0	470.2	467.2	462.9	455.7	446.9	442.5
47.5°	426.5	422.1	422.1	420.7	419.3	413.3	411.9	407.6	403.2	394.4	388.6
50°	374.1	374.1	374.1	372.7	368.3	366.8	363.9	359.6	355.2	349.4	340.7
52.5°	331.9	331.9	331.9	330.5	324.6	323.2	321.7	315.8	310.0	305.7	299.9
55°	292.5	294.1	292.5	289.7	285.3	285.3	281.0	278.0	272.2	267.8	262.0
57.5°	259.1	259.1	256.1	254.7	251.9	250.3	247.5	244.6	237.2	232.9	225.6
60°	227.1	225.6	225.6	222.7	219.9	216.9	215.5	211.1	208.2	200.8	195.0
62.5°	198.0	198.0	195.0	195.0	189.2	189.2	187.8	183.4	179.1	171.7	168.9
65°	170.3	170.3	168.9	167.4	163.0	161.6	160.2	155.8	151.4	147.0	142.7
67.5°	145.6	145.6	142.7	141.2	138.3	136.9	133.9	131.0	126.6	122.2	118.0
70°	122.2	120.8	119.4	118.0	115.0	113.6	110.6	107.7	103.3	100.5	96.1
72.5°	98.9	98.9	97.5	94.6	93.1	91.7	90.3	87.3	83.0	78.6	75.6
75°	77.2	77.2	77.2	74.2	71.3	69.9	69.9	66.9	64.1	59.7	56.7
77.5°	59.7	58.3	56.7	56.7	53.9	52.4	50.9	49.5	45.2	43.6	40.8
80°	40.8	42.2	40.8	39.4	37.8	36.4	36.4	33.5	32.0	29.1	26.2
82.5°	27.7	26.2	26.2	24.7	24.7	23.3	23.3	20.3	18.9	17.5	16.0
85°	14.5	14.5	13.1	13.1	13.1	11.7	11.7	10.2	10.2	8.7	7.3
87.5°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.0	3.0	3.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8
2.5°	987.0	984.0	982.6	982.6	981.1	979.6	978.2	976.7	973.8	973.8	970.9
5°	994.2	991.3	989.8	985.4	982.6	982.6	976.7	975.3	970.9	968.1	965.1
7.5°	1000.0	994.2	989.8	985.4	982.6	979.6	973.8	968.1	962.1	956.4	953.4
10°	1000.0	994.2	987.0	979.6	976.7	973.8	966.5	957.8	950.6	944.7	937.4
12.5°	997.1	988.4	979.6	973.8	968.1	963.7	954.9	946.2	937.4	925.7	920.0
15°	988.4	976.7	968.1	957.8	953.4	946.2	938.9	925.7	915.6	905.4	898.1
17.5°	970.9	956.4	946.2	936.0	928.7	924.3	912.7	901.0	889.3	877.8	869.0
20°	944.7	931.7	920.0	906.8	901.0	895.2	880.7	869.0	857.4	844.3	835.6
22.5°	912.7	899.6	883.5	873.4	864.6	857.4	844.3	831.2	819.5	807.9	796.2
25°	873.4	860.3	845.7	829.8	823.9	816.6	802.1	789.0	775.9	762.7	752.6
27.5°	831.2	813.7	802.1	784.6	778.8	771.5	755.5	740.9	729.3	719.1	707.4
30°	780.2	767.1	751.2	735.1	729.3	722.0	708.8	695.8	684.1	672.6	660.9
32.5°	724.9	711.8	695.8	684.1	675.4	669.6	656.5	644.9	633.2	621.6	611.3
35°	666.6	652.1	640.5	628.8	621.6	614.3	601.2	591.0	582.3	572.1	561.9
37.5°	607.0	596.8	585.2	572.1	564.8	559.0	548.8	537.1	529.9	521.1	513.8
40°	548.8	537.1	526.9	515.4	509.4	505.1	494.9	486.2	478.9	471.6	467.2
42.5°	489.1	478.9	468.7	461.5	457.1	452.7	445.4	435.2	430.8	423.6	419.3
45°	433.8	425.0	417.7	407.6	404.7	401.8	393.0	385.7	381.4	377.1	374.1
47.5°	381.4	375.5	366.8	361.0	356.6	353.8	347.9	342.1	337.7	334.7	331.9
50°	336.3	329.0	323.2	317.4	314.4	310.0	304.2	301.3	298.5	295.5	295.5
52.5°	294.1	286.8	281.0	276.6	273.6	270.8	266.4	264.9	262.0	262.0	260.5
55°	254.7	250.3	244.6	238.8	237.2	235.8	232.9	230.0	228.5	227.1	228.5
57.5°	221.3	216.9	211.1	206.7	205.2	203.8	202.4	199.4	198.0	198.0	198.0
60°	190.7	186.3	181.9	177.5	177.5	174.7	173.2	171.7	170.3	168.9	168.9
62.5°	163.0	158.6	154.3	151.4	149.9	148.5	145.6	144.1	142.7	142.7	141.2
65°	138.3	132.5	131.0	126.6	125.2	123.8	122.2	119.4	118.0	116.4	115.0
67.5°	113.6	110.6	106.3	103.3	101.9	100.5	98.9	96.1	94.6	93.1	90.3
70°	91.7	88.8	85.9	83.0	81.6	80.0	77.2	74.2	72.8	69.9	65.5
72.5°	71.3	68.4	65.5	62.6	61.1	59.7	56.7	53.9	50.9	48.0	45.2
75°	53.9	50.9	46.6	43.6	42.2	42.2	37.8	35.0	32.0	27.7	24.7
77.5°	37.8	33.5	32.0	29.1	27.7	24.7	21.9	18.9	16.0	14.5	11.7
80°	24.7	21.9	18.9	17.5	16.0	14.5	13.1	10.2	7.3	5.8	4.4
82.5°	14.5	13.1	11.7	10.2	8.7	7.3	5.8	5.8	4.4	3.0	1.4
85°	7.3	5.8	4.4	4.4	3.0	3.0	3.0	1.4	1.4	1.4	1.4
87.5°	3.0	1.4	1.4	1.4	1.4	1.4	1.4	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°	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8
2.5°	969.5	968.1	966.5	965.1	965.1	962.1	962.1	960.7	957.8	956.4	956.4
5°	960.7	956.4	953.4	952.0	950.6	946.2	944.7	941.8	938.9	936.0	934.5
7.5°	947.6	940.4	937.4	936.0	931.7	927.3	924.3	920.0	915.6	911.2	909.8
10°	931.7	924.3	917.0	914.2	909.8	906.8	901.0	895.2	890.9	886.5	882.1
12.5°	911.2	902.5	895.2	892.3	887.9	882.1	873.4	870.4	863.2	860.3	854.5
15°	887.9	877.8	870.4	866.1	861.8	853.0	847.1	841.3	834.1	831.2	825.4
17.5°	858.8	847.1	839.9	835.6	832.6	825.4	816.6	809.3	802.1	799.2	794.8
20°	823.9	816.6	806.5	802.1	799.2	790.4	781.7	778.8	772.9	767.1	762.7
22.5°	784.6	777.3	767.1	762.7	761.3	754.0	746.8	742.4	738.0	733.7	729.3
25°	743.8	735.1	726.3	723.5	720.5	714.8	708.8	706.0	701.6	698.7	695.8
27.5°	700.2	691.5	684.1	679.8	676.8	672.6	669.6	666.6	663.8	660.9	659.4
30°	653.5	644.9	639.0	636.2	633.2	631.8	627.4	625.9	624.5	621.6	623.0
32.5°	607.0	599.7	594.0	589.6	589.6	586.6	585.2	585.2	583.7	583.7	583.7
35°	556.0	551.6	547.3	545.8	544.4	543.0	541.5	543.0	541.5	543.0	544.4
37.5°	509.4	505.1	502.2	500.7	499.3	500.7	499.3	499.3	500.7	503.7	505.1
40°	461.5	458.5	455.7	457.1	455.7	455.7	455.7	460.0	461.5	462.9	464.3
42.5°	416.3	413.3	411.9	411.9	413.3	411.9	414.9	416.3	419.3	423.6	426.5
45°	372.7	371.1	371.1	372.7	371.1	374.1	374.1	377.1	381.4	384.3	387.2
47.5°	331.9	331.9	331.9	333.3	333.3	334.7	337.7	339.1	342.1	345.0	347.9
50°	294.1	295.5	296.9	296.9	296.9	299.9	302.8	304.2	305.7	307.1	311.5
52.5°	260.5	262.0	262.0	263.5	264.9	266.4	267.8	270.8	272.2	275.2	276.6
55°	228.5	228.5	231.4	232.9	232.9	232.9	235.8	235.8	238.8	240.2	243.1
57.5°	198.0	199.4	199.4	200.8	200.8	202.4	203.8	205.2	206.7	208.2	209.6
60°	168.9	168.9	168.9	170.3	171.7	173.2	171.7	174.7	174.7	177.5	179.1
62.5°	141.2	142.7	142.7	142.7	142.7	142.7	142.7	144.1	145.6	147.0	148.5
65°	115.0	115.0	115.0	113.6	115.0	113.6	115.0	116.4	116.4	118.0	119.4
67.5°	88.8	88.8	85.9	85.9	87.3	87.3	87.3	87.3	85.9	88.8	88.8
70°	64.1	62.6	61.1	59.7	59.7	58.3	58.3	56.7	56.7	56.7	56.7
72.5°	42.2	39.4	36.4	35.0	33.5	33.5	30.6	29.1	30.6	30.6	30.6
75°	21.9	18.9	17.5	16.0	14.5	14.5	13.1	13.1	13.1	13.1	13.1
77.5°	8.7	7.3	5.8	5.8	4.4	4.4	4.4	4.4	4.4	4.4	4.4
80°	3.0	3.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	1.4	0.0	0.0	1.4	0.0	1.4	1.4	1.4	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: P583981

CATALOG NUMBER: HC820D010-HM80520827-81WWBB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	973.8	973.8	973.8	973.8	973.8	973.8	973.8	973.8
2.5°	954.9	954.9	953.4	954.9	952.0	953.4	952.0	952.0
5°	933.1	930.1	930.1	930.1	928.7	928.7	927.3	927.3
7.5°	906.8	905.4	904.0	902.5	901.0	899.6	899.6	899.6
10°	880.7	877.8	877.8	876.3	873.4	872.0	872.0	872.0
12.5°	850.1	848.7	847.1	847.1	841.3	842.8	841.3	841.3
15°	821.0	819.5	819.5	815.1	812.3	812.3	812.3	810.7
17.5°	790.4	789.0	787.4	784.6	781.7	781.7	780.2	781.7
20°	758.4	757.0	754.0	754.0	752.6	751.2	748.2	749.6
22.5°	726.3	723.5	722.0	722.0	720.5	720.5	717.6	717.6
25°	692.9	691.5	689.9	691.5	688.5	688.5	685.6	685.6
27.5°	657.9	656.5	656.5	656.5	655.1	656.5	655.1	655.1
30°	623.0	623.0	621.6	621.6	623.0	621.6	623.0	624.5
32.5°	585.2	585.2	586.6	586.6	588.0	588.0	588.0	588.0
35°	545.8	548.8	548.8	550.2	551.6	553.2	553.2	554.6
37.5°	509.4	511.0	512.4	513.8	516.8	516.8	516.8	516.8
40°	470.2	471.6	474.6	473.0	478.9	480.4	478.9	478.9
42.5°	429.4	432.4	433.8	436.7	438.2	441.0	442.5	442.5
45°	391.6	393.0	396.0	398.8	400.3	404.7	404.7	404.7
47.5°	352.2	355.2	356.6	359.6	361.0	365.4	366.8	365.4
50°	314.4	317.4	320.2	320.2	324.6	326.1	329.0	330.5
52.5°	278.0	279.4	282.4	283.8	286.8	289.7	291.1	292.5
55°	243.1	244.6	247.5	247.5	251.9	253.3	256.1	256.1
57.5°	211.1	212.5	215.5	213.9	216.9	219.9	219.9	218.3
60°	180.5	180.5	180.5	183.4	184.9	186.3	187.8	187.8
62.5°	148.5	151.4	152.8	152.8	154.3	155.8	155.8	154.3
65°	119.4	122.2	123.8	123.8	125.2	125.2	125.2	126.6
67.5°	90.3	90.3	90.3	91.7	90.3	90.3	90.3	90.3
70°	56.7	56.7	56.7	56.7	55.3	56.7	56.7	58.3
72.5°	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
75°	13.1	13.1	13.1	14.5	13.1	13.1	13.1	13.1
77.5°	5.8	4.4	5.8	5.8	4.4	4.4	4.4	4.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	0.0	1.4	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



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













(END OF REPORT)