

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: P584064

Luminaire Tested: **HC820D010-HM80520930-81WWWB**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584064  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-18)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC820D010-HM80520930-81WWWB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1853.6 lumens  
Efficiency: N/A  
Efficacy: 92.7 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.09 / 1.18  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

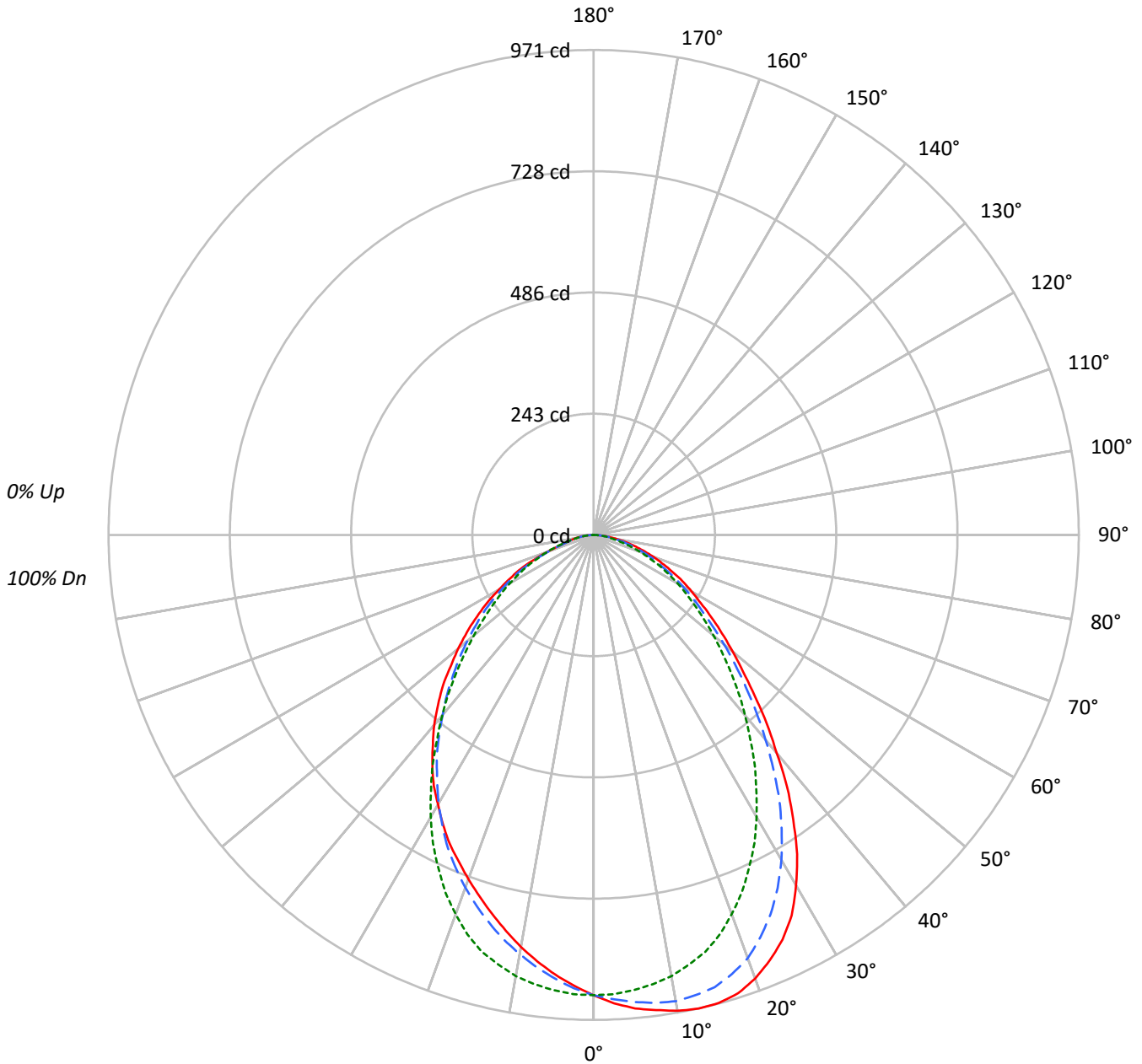
Input Watts (W): 20  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P584064

CATALOG NUMBER: HC820D010-HM80520930-81WWWB

### Luminous Intensity Polar Plot





TEST NUMBER: P584064

CATALOG NUMBER: HC820D010-HM80520930-81WWWB

**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	92	91	89	87								
2	102	94	88	83	99	93	87	82	89	85	81	86	82	79	83	80	77	75								
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65								
4	87	76	68	62	84	75	67	61	72	66	61	70	64	60	68	63	59	57								
5	80	69	60	54	78	67	60	54	65	59	54	64	58	53	62	57	52	50								
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45								
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40								
8	65	52	45	39	64	52	44	39	51	44	39	49	43	39	48	43	38	37								
9	61	48	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	33								
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	30								

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

	0°	90°	180°
0°	28419	28419	28419
5°	29459	28326	27354
10°	30294	28081	26233
15°	30970	27582	25073
20°	31014	26508	24057
25°	30424	25032	23204
30°	28856	23216	22190
35°	26215	21141	21190
40°	22925	18972	19974
45°	19864	16899	18612
50°	17395	15011	16954
55°	15489	13301	15338
60°	13969	11946	13488
65°	12608	10507	11747
70°	11324	8854	8736
75°	9984	7017	6553
80°	8382	5807	6269
85°	6475	5095	5555



TEST NUMBER: P584064

CATALOG NUMBER: HC820D010-HM80520930-81WWWB

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	86.9	4.7
10°-20°	244.9	13.2
20°-30°	350.0	18.9
30°-40°	371.9	20.1
40°-50°	320.2	17.3
50°-60°	239.4	12.9
60°-70°	152.7	8.2
70°-80°	69.5	3.7
80°-90°	18.2	1.0
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°	681.8	36.8
0°-40°	1053.7	56.8
0°-60°	1613.2	87.0
0°-90°	1853.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1853.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	922	922	922	922	922	
5°	952	939	915	892	884	91
15°	970	937	864	805	785	273
25°	894	838	736	691	682	409
35°	696	648	562	547	563	434
45°	456	431	388	398	427	354
55°	288	264	247	268	285	259
65°	173	153	144	151	161	172
75°	84	72	59	54	55	89
85°	18	16	14	16	16	22
90°	0	0	0	0	0	



TEST NUMBER: P584064

CATALOG NUMBER: HC820D010-HM80520930-81WWWB

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6
2.5°	938.6	936.0	937.3	936.0	937.3	937.3	934.7	934.7	934.7	934.7	930.8
5°	951.7	950.4	950.4	949.1	947.8	949.1	947.8	946.5	943.8	942.5	938.6
7.5°	959.5	959.5	959.5	959.5	958.2	956.9	955.6	953.0	950.4	947.8	945.1
10°	967.5	968.8	967.5	966.2	964.9	962.1	960.8	958.2	954.3	950.4	947.8
12.5°	971.4	971.4	970.1	970.1	967.5	966.2	962.1	958.2	954.3	950.4	943.8
15°	970.1	970.1	968.8	967.5	963.6	962.1	959.5	955.6	949.1	943.8	937.3
17.5°	962.1	960.8	958.2	958.2	953.0	951.7	949.1	943.8	937.3	929.5	921.6
20°	945.1	945.1	943.8	942.5	937.3	933.4	930.8	924.2	919.0	909.8	902.0
22.5°	921.6	924.2	921.6	919.0	912.5	911.1	907.2	899.4	891.5	881.1	871.8
25°	894.2	892.8	891.5	888.9	883.7	881.1	875.7	867.9	860.1	848.3	837.8
27.5°	858.7	853.5	853.5	848.3	844.4	840.4	837.8	830.0	819.5	810.4	797.3
30°	810.4	811.7	805.1	803.8	797.3	794.7	789.3	781.5	772.3	761.9	751.4
32.5°	758.0	754.0	754.0	748.8	743.6	739.7	738.4	729.2	721.4	710.9	700.3
35°	696.4	696.4	692.5	691.2	686.0	683.3	679.4	674.2	665.0	655.9	648.0
37.5°	636.3	633.6	632.3	629.7	625.8	621.9	621.9	612.6	611.3	600.9	590.4
40°	569.5	572.1	569.5	565.6	564.3	561.6	560.3	555.1	551.2	541.9	535.4
42.5°	513.2	510.5	510.5	509.2	504.0	504.0	501.4	498.8	492.2	489.6	481.8
45°	455.5	458.1	454.2	455.5	450.3	450.3	450.3	445.1	439.8	435.9	430.7
47.5°	405.8	407.1	407.1	403.2	401.9	401.9	399.3	396.7	392.8	387.5	383.6
50°	362.6	363.9	361.3	360.0	357.4	356.1	356.1	350.8	348.2	343.0	340.4
52.5°	323.4	323.4	322.1	322.1	318.1	318.1	315.5	311.6	309.0	306.4	299.8
55°	288.1	288.1	286.8	285.3	285.3	281.4	280.1	276.2	273.6	268.3	264.4
57.5°	254.0	255.3	254.0	252.7	251.3	250.0	247.4	243.5	240.9	237.0	234.3
60°	226.5	226.5	225.2	223.9	221.3	220.0	218.7	216.0	212.1	209.5	205.5
62.5°	200.3	198.9	197.6	196.3	193.7	193.7	191.1	188.5	184.6	181.9	179.3
65°	172.8	172.8	171.5	171.5	170.2	167.6	166.3	165.0	159.7	158.4	153.2
67.5°	148.0	149.3	146.6	146.6	144.0	144.0	142.7	138.8	137.5	134.9	132.3
70°	125.6	125.6	125.6	124.3	121.7	120.4	119.1	116.5	115.2	112.5	109.9
72.5°	103.4	103.4	102.1	102.1	100.8	99.5	98.2	95.6	95.6	92.9	90.3
75°	83.8	83.8	82.5	81.2	79.9	79.9	78.6	77.2	74.6	73.3	72.0
77.5°	64.2	64.2	64.2	62.9	61.6	61.6	61.6	58.9	56.3	56.3	55.0
80°	47.2	47.2	45.9	45.9	44.6	44.6	44.6	43.1	41.8	40.5	39.2
82.5°	31.4	31.4	31.4	31.4	30.1	30.1	30.1	28.8	27.5	27.5	27.5
85°	18.3	18.3	18.3	18.3	17.0	17.0	17.0	17.0	17.0	15.7	15.7
87.5°	7.8	6.5	7.8	6.5	7.8	6.5	7.8	6.5	6.5	6.5	6.5
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: P584064

CATALOG NUMBER: HC820D010-HM80520930-81WWWB

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6
2.5°	932.1	930.8	929.5	928.1	928.1	926.8	924.2	922.9	921.6	920.3	920.3
5°	937.3	936.0	933.4	930.8	929.5	926.8	924.2	921.6	919.0	915.1	913.8
7.5°	941.2	937.3	934.7	929.5	928.1	925.5	921.6	917.7	912.5	907.2	903.3
10°	941.2	936.0	932.1	925.5	922.9	920.3	915.1	908.5	902.0	896.8	890.2
12.5°	938.6	932.1	925.5	919.0	915.1	911.1	903.3	896.8	888.9	881.1	875.7
15°	929.5	921.6	913.8	905.9	902.0	896.8	888.9	879.8	871.8	864.0	854.8
17.5°	912.5	904.6	895.5	886.3	881.1	877.2	865.3	858.7	847.0	839.1	831.3
20°	890.2	881.1	869.2	860.1	853.5	849.6	840.4	828.7	819.5	807.8	799.9
22.5°	861.4	849.6	837.8	828.7	822.1	816.9	805.1	793.4	785.4	775.0	765.8
25°	827.4	815.6	803.8	790.8	784.1	778.9	768.4	758.0	747.5	735.7	727.9
27.5°	786.7	773.7	763.2	751.4	744.9	737.0	725.3	714.8	704.4	696.4	686.0
30°	742.3	727.9	717.4	705.7	699.0	692.5	680.7	670.3	661.1	652.0	646.7
32.5°	688.6	678.1	667.6	655.9	650.6	646.7	635.0	624.5	613.9	606.1	602.2
35°	637.6	625.8	616.6	606.1	599.6	595.6	585.2	576.0	570.8	561.6	556.4
37.5°	583.9	574.7	564.3	553.8	549.9	545.8	538.0	528.8	521.0	514.5	511.8
40°	527.5	519.7	510.5	504.0	500.1	496.2	489.6	483.1	477.9	471.3	468.7
42.5°	473.9	468.7	460.9	452.9	449.0	447.7	439.8	434.6	432.0	429.4	426.8
45°	425.5	417.6	412.4	407.1	403.2	400.6	396.7	392.8	390.1	387.5	384.9
47.5°	378.4	371.7	366.5	362.6	358.7	357.4	354.7	350.8	348.2	348.2	348.2
50°	335.1	329.9	324.7	322.1	320.7	318.1	315.5	314.2	312.9	312.9	312.9
52.5°	297.2	292.0	288.1	285.3	285.3	282.7	280.1	278.8	278.8	278.8	278.8
55°	261.8	257.9	255.3	252.7	250.0	248.7	248.7	248.7	247.4	247.4	248.7
57.5°	230.4	227.8	223.9	221.3	220.0	220.0	218.7	217.4	218.7	220.0	221.3
60°	201.6	198.9	197.6	193.7	193.7	193.7	192.4	192.4	192.4	193.7	195.0
62.5°	175.4	174.1	171.5	170.2	168.9	168.9	167.6	167.6	167.6	167.6	168.9
65°	151.9	149.3	146.6	146.6	146.6	145.3	145.3	142.7	144.0	144.0	142.7
67.5°	129.5	126.9	125.6	124.3	123.0	123.0	121.7	120.4	119.1	119.1	119.1
70°	108.6	106.0	106.0	103.4	103.4	102.1	100.8	100.8	99.5	98.2	96.9
72.5°	87.7	86.4	85.1	83.8	83.8	83.8	82.5	81.2	79.9	78.6	75.9
75°	69.4	69.4	66.8	65.5	65.5	64.2	62.9	61.6	60.2	58.9	57.6
77.5°	53.7	52.4	49.8	48.5	48.5	48.5	47.2	45.9	44.6	43.1	41.8
80°	39.2	37.9	36.6	35.3	35.3	35.3	34.0	34.0	32.7	32.7	32.7
82.5°	26.2	26.2	24.8	24.8	24.8	24.8	23.5	23.5	23.5	23.5	23.5
85°	15.7	15.7	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
87.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
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: P584064

CATALOG NUMBER: HC820D010-HM80520930-81WWWB

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6
2.5°	917.7	917.7	915.1	913.8	912.5	913.8	911.1	909.8	908.5	908.5	907.2
5°	909.8	908.5	903.3	902.0	900.7	899.4	896.8	894.2	891.5	890.2	888.9
7.5°	899.4	895.5	890.2	888.9	887.6	883.7	879.8	877.2	873.1	871.8	869.2
10°	885.0	879.8	875.7	871.8	869.2	865.3	861.4	857.4	852.2	850.9	847.0
12.5°	867.9	861.4	853.5	852.2	848.3	843.1	837.8	833.9	830.0	827.4	823.4
15°	847.0	840.4	832.6	828.7	824.8	820.8	814.3	809.1	805.1	801.2	797.3
17.5°	822.1	814.3	807.8	803.8	801.2	794.7	789.3	782.8	778.9	775.0	771.0
20°	792.1	785.4	776.3	772.3	771.0	765.8	759.3	756.7	751.4	747.5	744.9
22.5°	758.0	751.4	743.6	741.0	735.7	733.1	726.6	724.0	721.4	717.4	716.1
25°	720.0	713.5	707.0	705.7	701.6	699.0	695.1	691.2	691.2	687.3	687.3
27.5°	680.7	674.2	669.0	666.3	665.0	662.4	658.5	657.2	655.9	654.6	654.6
30°	638.9	631.0	628.4	627.1	625.8	623.2	621.9	619.2	620.6	621.9	620.6
32.5°	594.3	591.7	586.5	583.9	585.2	583.9	581.2	583.9	582.6	585.2	586.5
35°	551.2	548.6	545.8	545.8	543.2	543.2	543.2	544.5	547.3	548.6	551.2
37.5°	509.2	505.3	504.0	502.7	504.0	504.0	504.0	506.6	509.2	511.8	515.8
40°	464.8	462.2	462.2	462.2	462.2	466.1	464.8	467.4	470.0	473.9	477.9
42.5°	422.8	422.8	424.1	424.1	424.1	424.1	426.8	430.7	434.6	438.5	442.4
45°	383.6	383.6	383.6	386.2	386.2	387.5	392.8	395.4	398.0	401.9	405.8
47.5°	346.9	346.9	348.2	349.5	350.8	353.4	356.1	360.0	363.9	366.5	370.4
50°	312.9	314.2	316.8	319.4	319.4	320.7	324.7	327.3	329.9	333.8	335.1
52.5°	280.1	282.7	285.3	286.8	288.1	290.7	292.0	295.9	297.2	301.1	302.4
55°	250.0	251.3	255.3	256.6	256.6	259.2	261.8	264.4	268.3	268.3	271.0
57.5°	222.6	223.9	226.5	227.8	226.5	230.4	231.7	234.3	235.7	238.3	239.6
60°	195.0	197.6	198.9	198.9	200.3	201.6	204.2	204.2	206.8	209.5	209.5
62.5°	168.9	170.2	171.5	172.8	174.1	172.8	176.7	176.7	179.3	180.6	183.3
65°	144.0	145.3	145.3	146.6	146.6	148.0	148.0	149.3	150.6	153.2	154.5
67.5°	119.1	119.1	119.1	120.4	119.1	120.4	120.4	121.7	121.7	124.3	125.6
70°	96.9	95.6	94.2	94.2	94.2	94.2	92.9	94.2	94.2	95.6	95.6
72.5°	74.6	73.3	72.0	70.7	70.7	69.4	68.1	69.4	69.4	70.7	70.7
75°	56.3	53.7	53.7	53.7	52.4	52.4	52.4	53.7	53.7	53.7	55.0
77.5°	41.8	41.8	40.5	40.5	40.5	41.8	41.8	43.1	43.1	43.1	43.1
80°	31.4	32.7	32.7	32.7	32.7	34.0	34.0	34.0	34.0	35.3	35.3
82.5°	23.5	23.5	23.5	23.5	24.8	24.8	24.8	24.8	24.8	24.8	24.8
85°	14.4	15.7	15.7	14.4	15.7	15.7	15.7	15.7	15.7	15.7	15.7
87.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
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: P584064

CATALOG NUMBER: HC820D010-HM80520930-81WWWB

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	921.6	921.6	921.6	921.6	921.6	921.6	921.6	921.6
2.5°	905.9	905.9	905.9	905.9	904.6	904.6	904.6	903.3
5°	886.3	886.3	886.3	883.7	885.0	885.0	882.4	883.7
7.5°	866.6	865.3	864.0	864.0	862.7	861.4	860.1	861.4
10°	844.4	840.4	840.4	839.1	839.1	836.5	836.5	837.8
12.5°	819.5	816.9	816.9	815.6	814.3	813.0	811.7	811.7
15°	794.7	792.1	790.8	789.3	788.0	785.4	786.7	785.4
17.5°	769.7	765.8	765.8	764.5	763.2	760.6	760.6	759.3
20°	741.0	739.7	737.0	738.4	737.0	734.4	733.1	733.1
22.5°	712.2	712.2	710.9	710.9	709.6	708.3	707.0	707.0
25°	684.6	683.3	684.6	684.6	680.7	680.7	680.7	682.0
27.5°	653.3	654.6	653.3	653.3	653.3	653.3	654.6	653.3
30°	621.9	621.9	621.9	623.2	625.8	624.5	624.5	623.2
32.5°	587.8	589.1	589.1	590.4	591.7	594.3	594.3	595.6
35°	553.8	556.4	557.7	556.4	560.3	560.3	562.9	562.9
37.5°	518.4	519.7	522.3	523.6	526.2	527.5	528.8	528.8
40°	480.5	485.7	487.0	488.3	492.2	492.2	493.5	496.2
42.5°	445.1	450.3	451.6	452.9	455.5	459.4	458.1	460.9
45°	411.1	415.0	416.3	417.6	421.5	422.8	422.8	426.8
47.5°	374.5	377.1	378.4	381.0	383.6	386.2	388.8	387.5
50°	337.7	341.7	344.3	345.6	349.5	350.8	352.1	353.4
52.5°	305.1	307.7	309.0	310.3	314.2	315.5	316.8	319.4
55°	273.6	274.9	277.5	276.2	280.1	281.4	282.7	285.3
57.5°	242.2	243.5	244.8	244.8	247.4	250.0	251.3	252.7
60°	212.1	214.7	216.0	216.0	216.0	218.7	218.7	218.7
62.5°	184.6	184.6	185.9	185.9	188.5	188.5	188.5	188.5
65°	155.8	157.1	158.4	158.4	161.0	159.7	162.3	161.0
67.5°	125.6	125.6	128.2	128.2	126.9	128.2	128.2	128.2
70°	95.6	95.6	96.9	96.9	96.9	96.9	96.9	96.9
72.5°	70.7	70.7	70.7	72.0	70.7	70.7	72.0	70.7
75°	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0
77.5°	43.1	43.1	44.6	44.6	44.6	44.6	44.6	44.6
80°	35.3	35.3	35.3	35.3	36.6	35.3	35.3	35.3
82.5°	26.2	24.8	26.2	24.8	26.2	26.2	26.2	26.2
85°	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
87.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
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)