

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: P584079

Luminaire Tested: **HC820D010-HM80520935-81WWBB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584079
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-HM80520935-81WWBB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1722.5 lumens
Efficiency: N/A
Efficacy: 86.1 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

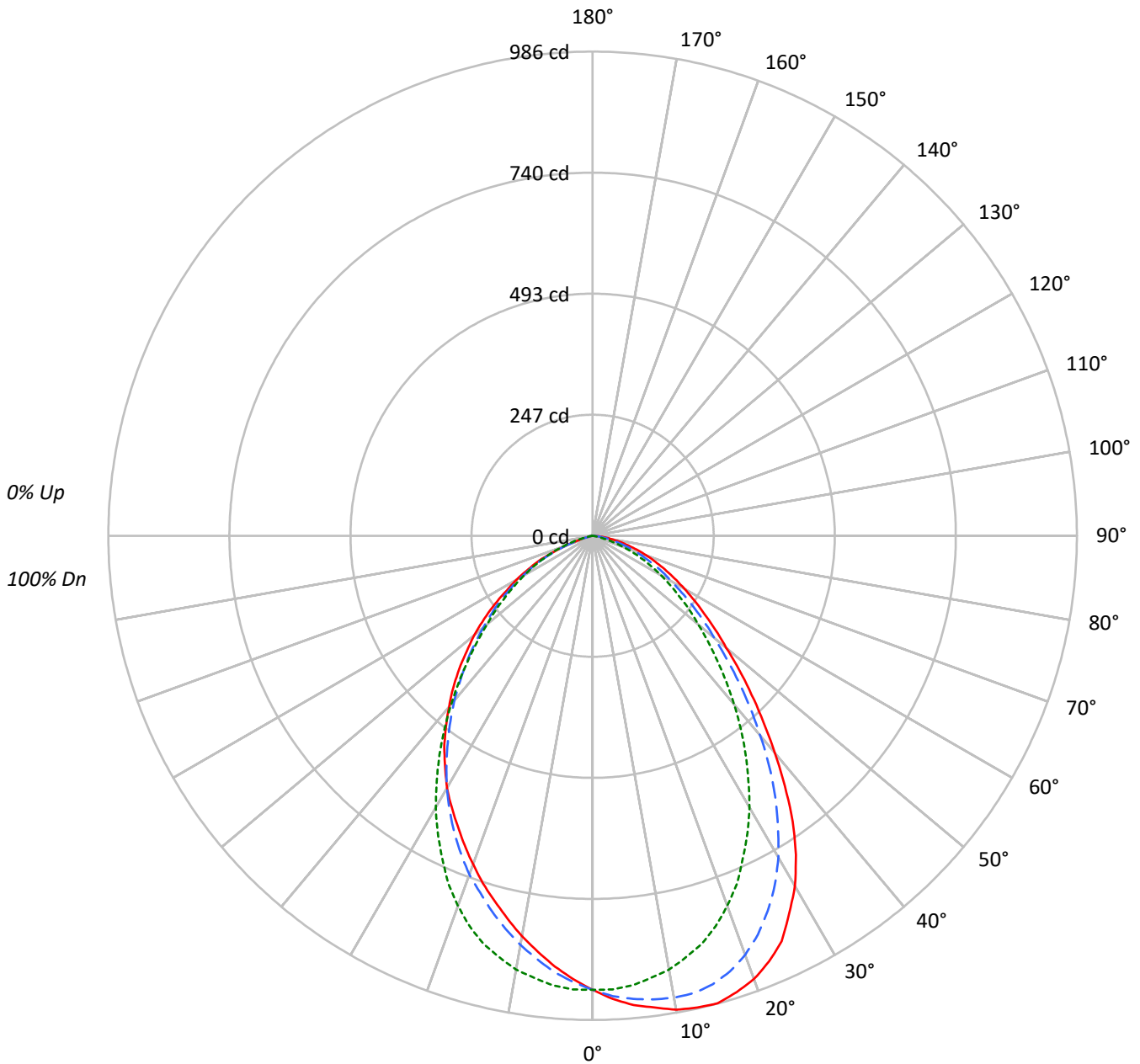
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
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°	28514	28514	28514
5°	29694	28453	27255
10°	30686	28090	25926
15°	31464	27448	24582
20°	31526	26311	23361
25°	30996	24644	22150
30°	29336	22738	21115
35°	26746	20448	19827
40°	23259	18030	18303
45°	19956	15612	16759
50°	17040	13461	15054
55°	14940	11591	13080
60°	13297	9892	11002
65°	11798	8070	8770
70°	10468	5978	4986
75°	8733	3122	1477
80°	6872	994	249
85°	4883	495	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.1	5.1
10°-20°	244.2	14.2
20°-30°	345.7	20.1
30°-40°	361.6	21.0
40°-50°	301.6	17.5
50°-60°	213.9	12.4
60°-70°	123.2	7.2
70°-80°	39.6	2.3
80°-90°	5.5	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°	677.0	39.3
0°-40°	1038.7	60.3
0°-60°	1554.2	90.2
0°-90°	1722.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1722.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	925	925	925	925	925	
5°	959	947	919	892	880	92
15°	986	946	860	792	770	277
25°	911	843	724	666	651	416
35°	710	648	543	514	527	440
45°	458	420	358	362	384	355
55°	278	249	216	227	243	251
65°	162	136	111	111	120	162
75°	73	54	26	12	12	79
85°	14	7	1	0	0	17
90°	0	0	0	0	0	



TEST NUMBER: P584079

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7
2.5°	944.1	942.6	941.3	942.6	941.3	942.6	941.3	941.3	939.9	938.5	938.5
5°	959.3	957.9	957.9	957.9	956.5	955.2	955.2	953.8	951.0	949.6	946.9
7.5°	969.0	970.3	970.3	970.3	967.6	967.6	964.9	962.0	959.3	956.5	952.3
10°	980.0	980.0	978.7	977.3	974.4	973.1	971.7	969.0	964.9	959.3	955.2
12.5°	984.1	984.1	982.8	980.0	978.7	977.3	975.9	971.7	966.2	959.3	953.8
15°	985.6	982.8	981.4	980.0	977.3	973.1	973.1	967.6	960.7	952.3	945.5
17.5°	974.4	975.9	973.1	970.3	966.2	963.4	959.3	955.2	946.9	937.2	930.2
20°	960.7	959.3	957.9	953.8	948.2	946.9	942.6	935.8	928.9	917.8	908.1
22.5°	938.5	937.2	934.4	931.7	926.1	923.4	919.2	911.0	901.3	890.2	879.2
25°	911.0	908.1	904.0	898.4	894.3	891.6	886.0	877.8	866.6	854.2	843.2
27.5°	866.6	870.8	868.1	859.8	855.6	850.1	848.7	837.7	828.0	815.6	803.1
30°	823.9	823.9	819.7	815.6	808.6	804.5	798.9	790.6	780.9	765.8	756.1
32.5°	770.0	768.5	763.0	761.7	756.1	747.9	746.4	735.3	725.6	714.6	702.2
35°	710.5	707.7	702.2	698.1	695.3	691.1	687.0	677.3	667.6	656.6	648.3
37.5°	642.8	642.8	641.4	634.5	631.7	628.9	624.8	615.1	609.6	598.6	590.2
40°	577.8	576.5	572.2	570.9	568.1	563.9	561.2	555.7	547.4	539.1	530.8
42.5°	514.2	515.6	510.0	511.5	505.9	503.2	501.8	493.5	489.3	481.1	474.1
45°	457.6	456.1	453.4	452.0	449.3	446.4	443.7	439.6	432.6	424.3	420.2
47.5°	405.0	400.8	400.8	399.5	398.1	392.5	391.1	387.0	382.8	374.6	369.0
50°	355.2	355.2	355.2	353.9	349.8	348.3	345.6	341.4	337.2	331.8	323.4
52.5°	315.1	315.1	315.1	313.8	308.3	306.8	305.4	300.0	294.4	290.3	284.7
55°	277.9	279.2	277.9	275.1	270.9	270.9	266.8	264.1	258.5	254.4	248.8
57.5°	246.1	246.1	243.3	241.8	239.1	237.7	235.0	232.3	225.3	221.2	214.3
60°	215.6	214.3	214.3	211.5	208.7	205.9	204.6	200.5	197.6	190.8	185.2
62.5°	187.9	187.9	185.2	185.2	179.7	179.7	178.4	174.1	170.0	163.1	160.4
65°	161.7	161.7	160.4	159.0	154.8	153.4	152.0	147.9	143.7	139.6	135.5
67.5°	138.2	138.2	135.5	134.0	131.3	129.9	127.2	124.3	120.2	116.1	111.9
70°	116.1	114.8	113.4	111.9	109.2	107.8	105.1	102.2	98.1	95.4	91.3
72.5°	94.0	94.0	92.7	89.8	88.4	87.1	85.7	83.0	78.8	74.6	71.9
75°	73.3	73.3	73.3	70.4	67.7	66.3	66.3	63.6	60.9	56.6	53.9
77.5°	56.6	55.3	53.9	53.9	51.2	49.8	48.3	47.0	42.9	41.5	38.7
80°	38.7	40.1	38.7	37.4	35.9	34.5	34.5	31.8	30.4	27.7	24.8
82.5°	26.2	24.8	24.8	23.5	23.5	22.1	22.1	19.4	18.0	16.5	15.2
85°	13.8	13.8	12.4	12.4	12.4	11.1	11.1	9.7	9.7	8.3	6.9
87.5°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	2.7	2.7	2.7
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°	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7
2.5°	937.2	934.4	933.1	933.1	931.7	930.2	928.9	927.5	924.7	924.7	922.0
5°	944.1	941.3	939.9	935.8	933.1	933.1	927.5	926.1	922.0	919.2	916.4
7.5°	949.6	944.1	939.9	935.8	933.1	930.2	924.7	919.2	913.7	908.1	905.4
10°	949.6	944.1	937.2	930.2	927.5	924.7	917.8	909.5	902.6	897.1	890.2
12.5°	946.9	938.5	930.2	924.7	919.2	915.1	906.7	898.4	890.2	879.2	873.6
15°	938.5	927.5	919.2	909.5	905.4	898.4	891.6	879.2	869.5	859.8	852.8
17.5°	922.0	908.1	898.4	888.7	881.9	877.8	866.6	855.6	844.5	833.5	825.2
20°	897.1	884.6	873.6	861.2	855.6	850.1	836.3	825.2	814.2	801.8	793.5
22.5°	866.6	854.2	839.0	829.4	821.0	814.2	801.8	789.2	778.2	767.1	756.1
25°	829.4	816.9	803.1	787.9	782.4	775.4	761.7	749.2	736.7	724.3	714.6
27.5°	789.2	772.7	761.7	745.0	739.5	732.6	717.4	703.5	692.5	682.8	671.7
30°	740.9	728.5	713.2	698.1	692.5	685.6	673.1	660.7	649.6	638.6	627.5
32.5°	688.4	676.0	660.7	649.6	641.4	635.8	623.4	612.4	601.3	590.2	580.6
35°	633.1	619.2	608.1	597.1	590.2	583.3	570.9	561.2	552.9	543.2	533.6
37.5°	576.5	566.8	555.7	543.2	536.3	530.8	521.1	510.0	503.2	494.9	487.9
40°	521.1	510.0	500.3	489.3	483.8	479.7	470.0	461.7	454.7	447.9	443.7
42.5°	464.4	454.7	445.1	438.2	434.0	429.9	422.9	413.3	409.2	402.2	398.1
45°	411.9	403.7	396.7	387.0	384.3	381.5	373.2	366.3	362.2	358.0	355.2
47.5°	362.2	356.6	348.3	342.8	338.6	335.9	330.4	324.8	320.7	318.0	315.1
50°	319.3	312.4	306.8	301.3	298.6	294.4	288.9	286.2	283.3	280.6	280.6
52.5°	279.2	272.3	266.8	262.6	259.9	257.1	252.9	251.5	248.8	248.8	247.4
55°	241.8	237.7	232.3	226.7	225.3	223.9	221.2	218.4	217.0	215.6	217.0
57.5°	210.2	205.9	200.5	196.3	194.9	193.5	192.2	189.4	187.9	187.9	187.9
60°	181.1	176.9	172.8	168.7	168.7	165.8	164.5	163.1	161.7	160.4	160.4
62.5°	154.8	150.7	146.6	143.7	142.4	141.0	138.2	136.9	135.5	135.5	134.0
65°	131.3	125.8	124.3	120.2	118.9	117.5	116.1	113.4	111.9	110.6	109.2
67.5°	107.8	105.1	100.9	98.1	96.8	95.4	94.0	91.3	89.8	88.4	85.7
70°	87.1	84.3	81.6	78.8	77.4	76.0	73.3	70.4	69.1	66.3	62.2
72.5°	67.7	65.0	62.2	59.5	58.0	56.6	53.9	51.2	48.3	45.6	42.9
75°	51.2	48.3	44.2	41.5	40.1	40.1	35.9	33.2	30.4	26.2	23.5
77.5°	35.9	31.8	30.4	27.7	26.2	23.5	20.7	18.0	15.2	13.8	11.1
80°	23.5	20.7	18.0	16.5	15.2	13.8	12.4	9.7	6.9	5.6	4.1
82.5°	13.8	12.4	11.1	9.7	8.3	6.9	5.6	5.6	4.1	2.7	1.4
85°	6.9	5.6	4.1	4.1	2.7	2.7	2.7	1.4	1.4	1.4	1.4
87.5°	2.7	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°	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7
2.5°	920.5	919.2	917.8	916.4	916.4	913.7	913.7	912.3	909.5	908.1	908.1
5°	912.3	908.1	905.4	904.0	902.6	898.4	897.1	894.3	891.6	888.7	887.4
7.5°	899.9	893.0	890.2	888.7	884.6	880.5	877.8	873.6	869.5	865.3	863.9
10°	884.6	877.8	870.8	868.1	863.9	861.2	855.6	850.1	846.0	841.8	837.7
12.5°	865.3	857.0	850.1	847.4	843.2	837.7	829.4	826.6	819.7	816.9	811.4
15°	843.2	833.5	826.6	822.4	818.3	810.0	804.5	798.9	792.1	789.2	783.8
17.5°	815.6	804.5	797.6	793.5	790.6	783.8	775.4	768.5	761.7	758.8	754.7
20°	782.4	775.4	765.8	761.7	758.8	750.6	742.3	739.5	734.0	728.5	724.3
22.5°	745.0	738.2	728.5	724.3	722.9	716.1	709.1	704.9	700.8	696.7	692.5
25°	706.4	698.1	689.7	687.0	684.3	678.7	673.1	670.4	666.3	663.5	660.7
27.5°	664.9	656.6	649.6	645.5	642.8	638.6	635.8	633.1	630.4	627.5	626.2
30°	620.7	612.4	606.8	604.0	601.3	599.9	595.7	594.4	593.0	590.2	591.6
32.5°	576.5	569.5	563.9	559.8	559.8	557.1	555.7	555.7	554.2	554.2	554.2
35°	528.0	523.9	519.7	518.3	517.0	515.6	514.2	515.6	514.2	515.6	517.0
37.5°	483.8	479.7	476.9	475.5	474.1	475.5	474.1	474.1	475.5	478.2	479.7
40°	438.2	435.4	432.6	434.0	432.6	432.6	432.6	436.7	438.2	439.6	440.9
42.5°	395.4	392.5	391.1	391.1	392.5	391.1	394.0	395.4	398.1	402.2	405.0
45°	353.9	352.5	352.5	353.9	352.5	355.2	355.2	358.0	362.2	364.9	367.7
47.5°	315.1	315.1	315.1	316.5	316.5	318.0	320.7	322.1	324.8	327.7	330.4
50°	279.2	280.6	282.0	282.0	282.0	284.7	287.5	288.9	290.3	291.6	295.9
52.5°	247.4	248.8	248.8	250.2	251.5	252.9	254.4	257.1	258.5	261.2	262.6
55°	217.0	217.0	219.7	221.2	221.2	221.2	223.9	223.9	226.7	228.1	230.8
57.5°	187.9	189.4	189.4	190.8	190.8	192.2	193.5	194.9	196.3	197.6	199.0
60°	160.4	160.4	160.4	161.7	163.1	164.5	163.1	165.8	165.8	168.7	170.0
62.5°	134.0	135.5	135.5	135.5	135.5	135.5	135.5	136.9	138.2	139.6	141.0
65°	109.2	109.2	109.2	107.8	109.2	107.8	109.2	110.6	110.6	111.9	113.4
67.5°	84.3	84.3	81.6	81.6	83.0	83.0	83.0	83.0	81.6	84.3	84.3
70°	60.9	59.5	58.0	56.6	56.6	55.3	55.3	53.9	53.9	53.9	53.9
72.5°	40.1	37.4	34.5	33.2	31.8	31.8	29.1	27.7	29.1	29.1	29.1
75°	20.7	18.0	16.5	15.2	13.8	13.8	12.4	12.4	12.4	12.4	12.4
77.5°	8.3	6.9	5.6	5.6	4.1	4.1	4.1	4.1	4.1	4.1	4.1
80°	2.7	2.7	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: P584079

CATALOG NUMBER: HC820D010-HM80520935-81WWBB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	924.7	924.7	924.7	924.7	924.7	924.7	924.7	924.7
2.5°	906.7	906.7	905.4	906.7	904.0	905.4	904.0	904.0
5°	886.0	883.3	883.3	883.3	881.9	881.9	880.5	880.5
7.5°	861.2	859.8	858.4	857.0	855.6	854.2	854.2	854.2
10°	836.3	833.5	833.5	832.1	829.4	828.0	828.0	828.0
12.5°	807.2	805.9	804.5	804.5	798.9	800.3	798.9	798.9
15°	779.6	778.2	778.2	774.1	771.3	771.3	771.3	770.0
17.5°	750.6	749.2	747.9	745.0	742.3	742.3	740.9	742.3
20°	720.2	718.8	716.1	716.1	714.6	713.2	710.5	711.9
22.5°	689.7	687.0	685.6	685.6	684.3	684.3	681.4	681.4
25°	657.9	656.6	655.2	656.6	653.8	653.8	651.0	651.0
27.5°	624.8	623.4	623.4	623.4	622.0	623.4	622.0	622.0
30°	591.6	591.6	590.2	590.2	591.6	590.2	591.6	593.0
32.5°	555.7	555.7	557.1	557.1	558.4	558.4	558.4	558.4
35°	518.3	521.1	521.1	522.4	523.9	525.3	525.3	526.7
37.5°	483.8	485.2	486.5	487.9	490.6	490.6	490.6	490.6
40°	446.4	447.9	450.6	449.3	454.7	456.1	454.7	454.7
42.5°	407.8	410.5	411.9	414.6	416.1	418.8	420.2	420.2
45°	371.9	373.2	376.0	378.7	380.1	384.3	384.3	384.3
47.5°	334.5	337.2	338.6	341.4	342.8	346.9	348.3	346.9
50°	298.6	301.3	304.1	304.1	308.3	309.7	312.4	313.8
52.5°	264.1	265.4	268.2	269.5	272.3	275.1	276.5	277.9
55°	230.8	232.3	235.0	235.0	239.1	240.5	243.3	243.3
57.5°	200.5	201.8	204.6	203.2	205.9	208.7	208.7	207.3
60°	171.4	171.4	171.4	174.1	175.5	176.9	178.4	178.4
62.5°	141.0	143.7	145.1	145.1	146.6	147.9	147.9	146.6
65°	113.4	116.1	117.5	117.5	118.9	118.9	118.9	120.2
67.5°	85.7	85.7	85.7	87.1	85.7	85.7	85.7	85.7
70°	53.9	53.9	53.9	53.9	52.5	53.9	53.9	55.3
72.5°	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
75°	12.4	12.4	12.4	13.8	12.4	12.4	12.4	12.4
77.5°	5.6	4.1	5.6	5.6	4.1	4.1	4.1	4.1
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)