

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: P583897

Luminaire Tested: **HC815D010-HM80520840-81WWW**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P583897  
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: HC815D010-HM80520840-81WWW  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1616.2 lumens  
Efficiency: N/A  
Efficacy: 115.4 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

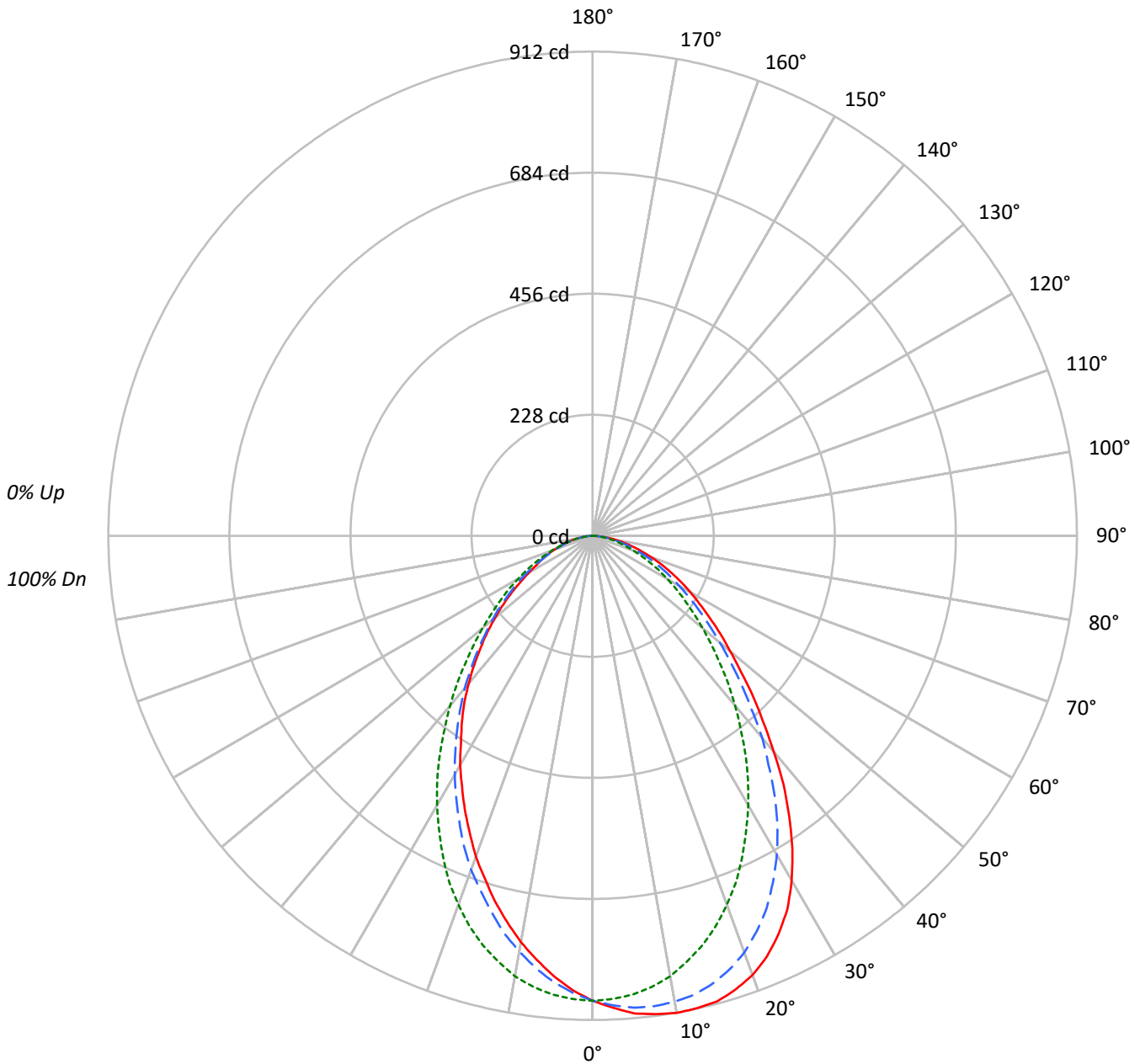
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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								
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°	27003	27003	27003
5°	27952	26850	25782
10°	28572	26377	24333
15°	28981	25488	22724
20°	28894	24251	21097
25°	28179	22680	19363
30°	26698	20858	17771
35°	24288	18875	16149
40°	21335	16790	14592
45°	18604	14766	13004
50°	16186	12938	11456
55°	14440	11371	9962
60°	13118	9966	8505
65°	11791	8668	7720
70°	10495	7384	6960
75°	9198	6231	5945
80°	7813	5079	5292
85°	5873	3786	4210



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	82.0	5.1
10°-20°	226.0	14.0
20°-30°	313.7	19.4
30°-40°	324.3	20.1
40°-50°	271.6	16.8
50°-60°	197.1	12.2
60°-70°	124.4	7.7
70°-80°	61.6	3.8
80°-90°	15.3	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°	621.7	38.5
0°-40°	946.1	58.5
0°-60°	1414.8	87.5
0°-90°	1616.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1616.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	876	876	876	876	876	
5°	903	892	867	844	833	86
15°	908	873	798	734	712	255
25°	828	775	667	594	569	380
35°	645	598	501	444	429	402
45°	427	396	339	305	298	330
55°	269	245	212	194	185	242
65°	162	141	119	105	106	161
75°	77	64	52	50	50	83
85°	17	13	11	12	12	20
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°	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7
2.5°	890.0	890.0	891.2	890.0	890.0	890.0	888.8	888.8	887.6	887.6	885.2
5°	903.0	900.6	903.0	900.6	900.6	900.6	899.5	897.1	895.9	893.5	892.3
7.5°	908.9	907.8	907.8	906.6	906.6	905.4	904.2	903.0	898.3	897.1	893.5
10°	912.5	911.3	911.3	910.1	907.8	907.8	905.4	904.2	898.3	895.9	891.2
12.5°	911.3	911.3	911.3	910.1	906.6	905.4	903.0	899.5	894.7	890.0	885.2
15°	907.8	907.8	905.4	904.2	900.6	898.3	897.1	891.2	886.4	880.5	873.4
17.5°	895.9	895.9	894.7	892.3	888.8	886.4	884.0	878.1	873.4	863.9	856.8
20°	880.5	879.3	878.1	874.6	871.0	869.8	866.3	857.8	851.9	844.8	835.3
22.5°	857.8	856.8	855.6	853.1	847.2	844.8	842.4	836.5	825.8	818.7	806.7
25°	828.2	828.2	825.8	822.3	816.3	814.0	810.4	804.5	794.9	784.2	774.7
27.5°	793.7	792.5	789.0	786.6	781.8	778.3	772.4	765.2	755.7	747.3	735.5
30°	749.8	749.8	747.3	743.8	737.9	735.5	730.7	722.4	712.9	702.3	694.0
32.5°	699.9	699.9	696.2	694.0	690.3	684.4	683.2	673.7	665.4	657.1	647.6
35°	645.2	646.4	644.1	639.3	633.3	633.3	630.9	622.6	613.1	604.8	597.7
37.5°	590.6	587.0	585.8	583.5	579.8	575.1	572.7	569.1	560.8	554.9	544.2
40°	530.0	531.2	528.8	526.3	525.1	521.6	520.4	514.5	508.5	501.4	496.7
42.5°	475.3	475.3	475.3	473.0	470.6	466.9	465.7	462.2	455.1	450.3	443.2
45°	426.6	423.0	423.0	421.9	420.7	418.3	414.6	412.4	407.5	404.0	395.7
47.5°	379.1	380.2	379.1	377.9	374.3	373.1	371.9	367.2	362.5	358.8	352.9
50°	337.4	339.8	337.4	337.4	335.1	333.9	331.5	328.0	324.4	318.5	312.5
52.5°	302.9	302.9	301.9	300.6	297.0	294.6	293.5	292.3	286.3	281.6	276.9
55°	268.6	269.7	269.7	266.2	265.0	262.6	261.4	257.9	255.5	248.4	244.7
57.5°	238.8	237.6	238.8	236.4	234.1	231.7	230.5	228.1	224.6	219.8	215.1
60°	212.7	210.3	210.3	209.1	206.8	205.6	203.2	199.7	196.1	191.4	187.7
62.5°	186.5	185.3	184.1	183.0	180.6	179.4	178.2	174.7	171.1	167.5	164.0
65°	161.6	161.6	160.4	158.0	156.9	155.7	154.5	152.1	147.4	145.0	141.3
67.5°	139.1	137.9	137.9	135.4	133.0	131.9	131.9	129.5	125.9	122.4	120.0
70°	116.4	117.6	116.4	115.2	112.9	112.9	110.5	109.3	104.6	103.4	99.8
72.5°	96.3	96.3	95.1	95.1	92.7	91.5	91.5	89.2	86.8	84.4	81.9
75°	77.2	77.2	77.2	76.0	74.8	72.5	72.5	71.3	68.9	66.5	64.1
77.5°	60.6	59.4	59.4	58.2	57.0	55.8	55.8	54.7	52.3	51.1	48.7
80°	44.0	42.8	42.8	42.8	40.4	41.6	40.4	39.2	38.1	36.9	35.7
82.5°	28.6	29.8	29.8	28.6	27.4	27.4	27.4	26.1	26.1	24.9	23.7
85°	16.6	16.6	16.6	16.6	15.4	15.4	15.4	14.2	14.2	14.2	13.0
87.5°	7.1	7.1	7.1	7.1	7.1	7.1	5.9	5.9	5.9	5.9	5.9
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°	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7
2.5°	885.2	882.9	881.7	880.5	880.5	879.3	878.1	875.7	875.7	873.4	872.2
5°	890.0	886.4	884.0	881.7	880.5	878.1	875.7	872.2	871.0	867.4	863.9
7.5°	891.2	885.2	882.9	878.1	875.7	873.4	868.6	865.1	860.2	856.8	851.9
10°	886.4	881.7	875.7	869.8	868.6	865.1	857.8	853.1	847.2	842.4	835.3
12.5°	879.3	872.2	866.3	859.0	855.6	851.9	844.8	837.7	829.4	821.1	814.0
15°	867.4	859.0	850.7	842.4	837.7	834.1	825.8	817.5	809.2	798.4	791.3
17.5°	849.5	840.1	831.8	821.1	816.3	812.8	802.0	792.5	781.8	771.2	764.0
20°	827.0	815.1	805.7	793.7	790.1	784.2	773.5	762.9	751.0	739.0	730.7
22.5°	797.3	785.4	774.7	762.9	756.9	751.0	740.2	727.2	715.3	705.8	697.5
25°	762.9	752.2	739.0	728.4	721.2	714.1	702.3	691.5	680.8	666.6	658.3
27.5°	724.8	711.8	702.3	687.9	680.8	676.1	663.0	648.8	639.3	626.2	616.7
30°	682.0	670.1	659.5	645.2	638.0	633.3	621.4	608.4	598.9	585.8	576.2
32.5°	636.8	623.8	610.7	601.3	593.0	588.2	575.1	566.8	554.9	544.2	533.5
35°	588.2	575.1	565.6	552.5	547.8	543.0	532.4	521.6	510.9	501.4	493.1
37.5°	535.9	526.3	515.7	506.2	502.6	497.9	484.8	475.3	466.9	457.4	450.3
40°	484.8	476.5	469.3	459.8	453.9	450.3	440.8	432.5	423.0	417.1	409.9
42.5°	438.5	429.0	421.9	414.6	408.7	405.2	396.9	390.9	383.8	377.9	369.6
45°	389.7	385.0	376.7	370.8	367.2	362.5	356.4	349.3	343.4	338.6	332.7
47.5°	346.9	342.2	336.3	329.1	326.8	323.2	317.3	312.5	307.8	302.9	297.0
50°	307.8	301.9	297.0	292.3	289.9	286.3	280.4	278.0	274.5	269.7	266.2
52.5°	272.1	267.4	262.6	256.7	255.5	253.0	249.6	244.7	241.2	238.8	236.4
55°	240.0	235.2	231.7	226.9	225.8	223.4	218.6	216.3	213.9	211.5	209.1
57.5°	211.5	206.8	202.0	199.7	197.3	194.8	193.6	190.1	187.7	186.5	184.1
60°	185.3	180.6	177.0	173.5	172.3	171.1	168.7	166.4	164.0	161.6	160.4
62.5°	160.4	155.7	153.3	150.9	148.6	148.6	146.2	143.8	141.3	140.3	137.9
65°	137.9	135.4	131.9	128.3	127.1	127.1	123.6	122.4	121.2	118.8	116.4
67.5°	116.4	114.1	110.5	109.3	108.1	106.9	105.8	103.4	101.0	99.8	97.5
70°	97.5	95.1	92.7	91.5	90.3	89.2	86.8	85.6	83.1	81.9	80.9
72.5°	78.4	77.2	74.8	73.6	72.5	71.3	70.1	68.9	66.5	65.3	64.1
75°	63.0	61.8	59.4	58.2	57.0	57.0	55.8	53.5	52.3	52.3	51.1
77.5°	47.5	46.4	45.2	44.0	42.8	42.8	41.6	40.4	39.2	39.2	38.1
80°	34.5	33.3	32.1	32.1	32.1	30.8	29.8	29.8	28.6	28.6	27.4
82.5°	22.5	22.5	21.3	21.3	21.3	20.2	20.2	19.0	19.0	19.0	19.0
85°	13.0	13.0	13.0	11.9	11.9	11.9	11.9	11.9	11.9	10.7	11.9
87.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	4.7	4.7	4.7
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7
2.5°	871.0	869.8	867.4	867.4	865.1	865.1	863.9	862.7	861.5	860.2	859.0
5°	862.7	857.8	855.6	854.3	851.9	850.7	847.2	844.8	843.6	841.2	838.9
7.5°	847.2	842.4	837.7	836.5	835.3	830.6	827.0	823.5	821.1	818.7	816.3
10°	829.4	824.6	818.7	816.3	814.0	808.0	803.3	799.6	794.9	790.1	789.0
12.5°	808.0	800.8	793.7	791.3	787.8	781.8	777.1	771.2	767.6	761.7	760.5
15°	783.0	774.7	768.8	762.9	760.5	754.6	746.3	741.4	734.3	731.9	726.0
17.5°	753.4	745.1	736.7	734.3	730.7	722.4	714.1	708.2	701.1	697.5	694.0
20°	722.4	711.8	703.5	701.1	696.2	689.1	680.8	674.9	669.0	661.8	658.3
22.5°	686.8	674.9	667.8	661.8	660.7	652.4	642.9	638.0	633.3	627.3	622.6
25°	647.6	636.8	628.5	623.8	621.4	614.3	607.2	601.3	594.1	590.6	584.7
27.5°	607.2	600.1	589.4	584.7	581.1	575.1	566.8	563.2	556.1	551.3	547.8
30°	567.9	557.3	551.3	545.4	541.9	535.9	528.8	525.1	519.2	514.5	510.9
32.5°	525.1	518.0	509.7	507.4	502.6	496.7	491.9	486.0	481.3	476.5	475.3
35°	486.0	476.5	468.1	465.7	462.2	456.3	453.9	450.3	444.4	443.2	438.5
37.5°	443.2	438.5	429.0	425.4	424.2	419.5	414.6	412.4	408.7	405.2	404.0
40°	402.8	396.9	392.1	388.5	386.2	382.6	377.9	376.7	374.3	369.6	368.4
42.5°	364.8	358.8	354.1	352.9	349.3	345.7	343.4	339.8	338.6	337.4	335.1
45°	328.0	324.4	319.7	318.5	317.3	312.5	310.2	307.8	305.3	304.1	301.9
47.5°	294.6	291.1	287.5	286.3	284.0	282.8	279.2	278.0	274.5	273.3	272.1
50°	262.6	260.3	257.9	256.7	254.3	253.0	250.8	248.4	245.9	244.7	243.5
52.5°	234.1	231.7	229.3	228.1	226.9	224.6	222.2	219.8	218.6	217.5	216.3
55°	206.8	204.4	203.2	202.0	200.8	199.7	196.1	194.8	193.6	192.4	190.1
57.5°	181.8	179.4	177.0	177.0	175.8	174.7	172.3	169.9	169.9	167.5	165.2
60°	159.2	156.9	154.5	153.3	152.1	149.7	148.6	147.4	146.2	145.0	142.6
62.5°	135.4	134.2	131.9	131.9	129.5	128.3	127.1	125.9	124.7	122.4	121.2
65°	115.2	114.1	111.7	110.5	110.5	109.3	106.9	105.8	104.6	104.6	103.4
67.5°	96.3	95.1	92.7	91.5	91.5	90.3	89.2	89.2	88.0	86.8	88.0
70°	79.7	77.2	77.2	76.0	76.0	74.8	73.6	73.6	73.6	74.8	74.8
72.5°	63.0	61.8	60.6	60.6	60.6	60.6	59.4	59.4	60.6	61.8	61.8
75°	49.9	48.7	48.7	48.7	47.5	47.5	48.7	48.7	49.9	49.9	49.9
77.5°	36.9	36.9	36.9	36.9	36.9	36.9	38.1	38.1	39.2	39.2	39.2
80°	27.4	27.4	27.4	27.4	27.4	28.6	28.6	28.6	28.6	28.6	29.8
82.5°	19.0	19.0	19.0	19.0	19.0	19.0	19.0	20.2	20.2	20.2	20.2
85°	10.7	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
87.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
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: P583897

CATALOG NUMBER: HC815D010-HM80520840-81WWW

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	875.7	875.7	875.7	875.7	875.7	875.7	875.7	875.7
2.5°	857.8	857.8	857.8	859.0	856.8	856.8	856.8	856.8
5°	837.7	836.5	835.3	836.5	834.1	834.1	832.9	832.9
7.5°	812.8	811.6	810.4	810.4	808.0	808.0	806.7	805.7
10°	785.4	783.0	784.2	781.8	780.7	779.5	778.3	777.1
12.5°	755.7	753.4	752.2	749.8	747.3	746.3	747.3	745.1
15°	723.6	720.1	718.9	716.5	714.1	712.9	712.9	711.8
17.5°	687.9	685.6	684.4	682.0	680.8	678.5	677.3	676.1
20°	654.7	648.8	650.0	647.6	646.4	641.7	641.7	642.9
22.5°	617.9	614.3	611.9	609.6	608.4	606.0	606.0	604.8
25°	581.1	577.4	576.2	573.9	572.7	570.3	569.1	569.1
27.5°	545.4	540.7	540.7	538.3	535.9	534.7	533.5	532.4
30°	507.4	503.8	502.6	502.6	501.4	501.4	497.9	499.1
32.5°	471.8	469.3	468.1	465.7	465.7	464.6	464.6	461.0
35°	436.1	432.5	433.7	431.3	430.2	429.0	430.2	429.0
37.5°	401.6	399.2	399.2	396.9	396.9	395.7	394.5	396.9
40°	367.2	366.0	364.8	363.5	364.8	363.5	361.3	362.5
42.5°	332.7	332.7	331.5	331.5	330.3	330.3	330.3	330.3
45°	301.9	300.6	300.6	299.4	299.4	299.4	299.4	298.2
47.5°	270.9	269.7	269.7	269.7	268.6	268.6	267.4	268.6
50°	241.2	241.2	240.0	240.0	241.2	240.0	238.8	238.8
52.5°	213.9	213.9	212.7	212.7	211.5	210.3	211.5	211.5
55°	188.9	187.7	186.5	186.5	185.3	184.1	184.1	185.3
57.5°	165.2	164.0	162.8	162.8	160.4	159.2	159.2	159.2
60°	142.6	140.3	140.3	139.1	139.1	137.9	137.9	137.9
62.5°	121.2	120.0	120.0	120.0	120.0	118.8	118.8	118.8
65°	103.4	103.4	103.4	104.6	104.6	105.8	105.8	105.8
67.5°	89.2	90.3	90.3	90.3	91.5	91.5	91.5	90.3
70°	76.0	76.0	76.0	77.2	77.2	77.2	77.2	77.2
72.5°	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
75°	49.9	51.1	51.1	51.1	49.9	51.1	51.1	49.9
77.5°	39.2	39.2	39.2	39.2	39.2	39.2	39.2	39.2
80°	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
82.5°	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2
85°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
87.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
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)