

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: P584045

Luminaire Tested: **HC820D010-HM80520927-81WWBB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584045
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-HM80520927-81WWBB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1472.8 lumens
Efficiency: N/A
Efficacy: 73.6 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

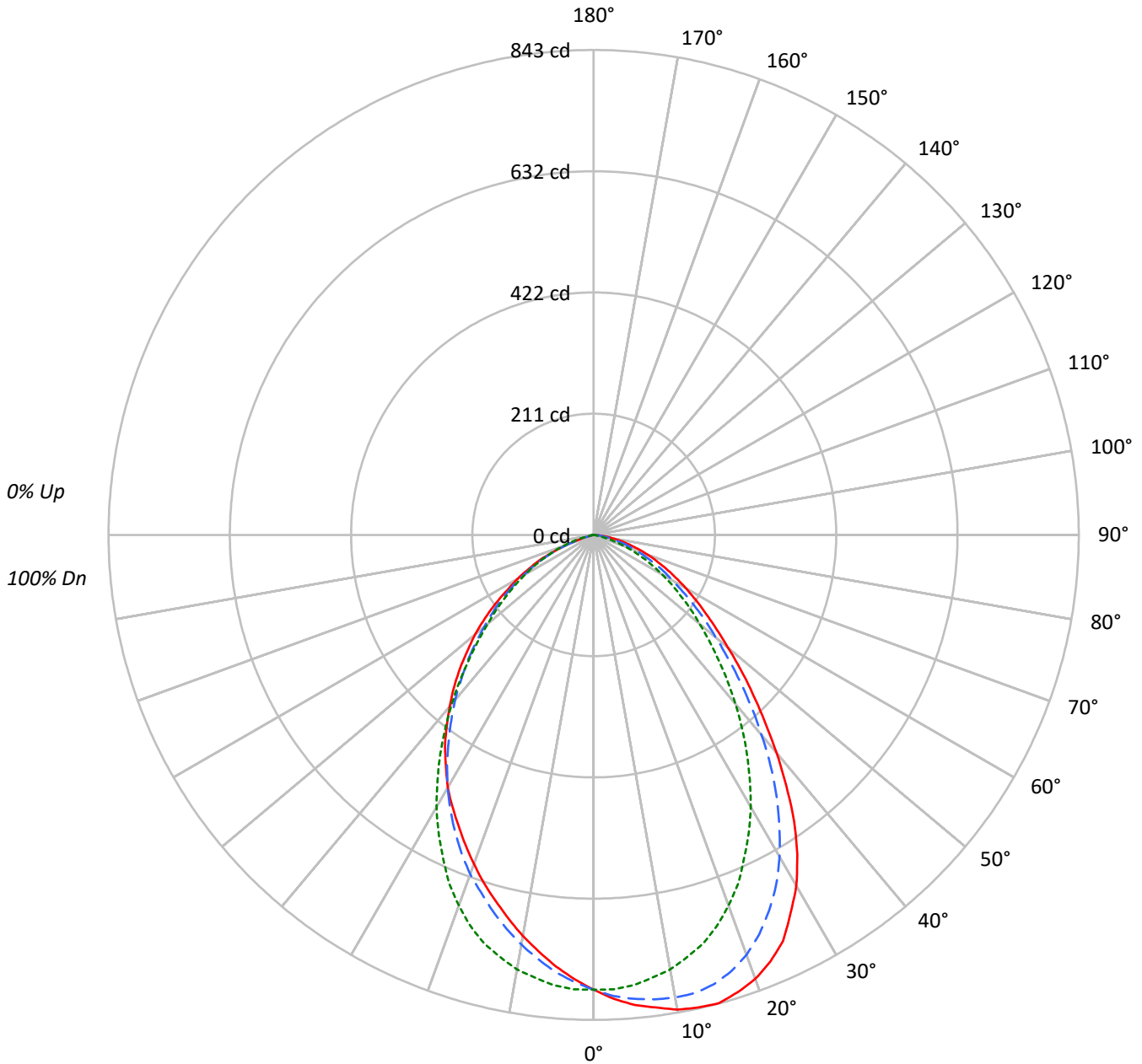
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	24379	24379	24379
5°	25389	24327	23302
10°	26236	24016	22166
15°	26899	23467	21016
20°	26955	22492	19971
25°	26498	21068	18938
30°	25081	19441	18056
35°	22865	17486	16951
40°	19889	15417	15655
45°	17060	13349	14330
50°	14574	11509	12871
55°	12774	9914	11182
60°	11372	8455	9405
65°	10091	6902	7501
70°	8953	5112	4265
75°	7458	2681	1263
80°	5878	835	213
85°	4175	425	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.5	5.1
10°-20°	208.8	14.2
20°-30°	295.5	20.1
30°-40°	309.2	21.0
40°-50°	257.9	17.5
50°-60°	182.9	12.4
60°-70°	105.3	7.2
70°-80°	33.9	2.3
80°-90°	4.7	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°	578.8	39.3
0°-40°	888.1	60.3
0°-60°	1328.9	90.2
0°-90°	1472.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1472.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	791	791	791	791	791	
5°	820	810	786	762	753	79
15°	843	808	735	677	658	237
25°	779	721	619	570	557	355
35°	607	554	464	440	450	377
45°	391	359	306	310	329	303
55°	238	213	184	194	208	215
65°	138	116	95	95	103	138
75°	63	46	22	11	11	68
85°	12	6	1	0	0	15
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°	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6
2.5°	807.2	806.0	804.8	806.0	804.8	806.0	804.8	804.8	803.6	802.5	802.5
5°	820.2	819.0	819.0	819.0	817.8	816.6	816.6	815.5	813.1	811.9	809.6
7.5°	828.5	829.6	829.6	829.6	827.3	827.3	824.9	822.6	820.2	817.8	814.3
10°	837.9	837.9	836.7	835.6	833.2	832.0	830.8	828.5	824.9	820.2	816.6
12.5°	841.5	841.5	840.3	837.9	836.7	835.6	834.4	830.8	826.1	820.2	815.5
15°	842.6	840.3	839.1	837.9	835.6	832.0	832.0	827.3	821.4	814.3	808.4
17.5°	833.2	834.4	832.0	829.6	826.1	823.7	820.2	816.6	809.6	801.3	795.4
20°	821.4	820.2	819.0	815.5	810.7	809.6	806.0	800.1	794.2	784.7	776.5
22.5°	802.5	801.3	798.9	796.5	791.8	789.5	785.9	778.8	770.5	761.1	751.6
25°	778.8	776.5	772.9	768.2	764.6	762.3	757.5	750.5	741.0	730.4	720.9
27.5°	741.0	744.5	742.2	735.1	731.5	726.8	725.6	716.2	707.9	697.3	686.6
30°	704.4	704.4	700.8	697.3	691.4	687.8	683.1	676.0	667.7	654.7	646.4
32.5°	658.3	657.1	652.3	651.2	646.4	639.3	638.2	628.7	620.4	611.0	600.3
35°	607.4	605.1	600.3	596.8	594.4	590.9	587.3	579.1	570.8	561.3	554.2
37.5°	549.5	549.5	548.3	542.4	540.1	537.7	534.1	526.0	521.3	511.8	504.7
40°	494.1	492.9	489.3	488.2	485.8	482.3	479.9	475.2	468.1	461.0	453.9
42.5°	439.7	440.9	436.2	437.3	432.6	430.2	429.1	422.0	418.4	411.3	405.4
45°	391.2	390.1	387.7	386.5	384.2	381.8	379.4	375.9	370.0	362.9	359.3
47.5°	346.3	342.8	342.8	341.6	340.4	335.7	334.5	331.0	327.4	320.3	315.6
50°	303.8	303.8	303.8	302.6	299.0	297.9	295.5	292.0	288.4	283.7	276.6
52.5°	269.5	269.5	269.5	268.3	263.6	262.4	261.2	256.5	251.8	248.2	243.5
55°	237.6	238.8	237.6	235.2	231.7	231.7	228.1	225.8	221.0	217.5	212.8
57.5°	210.4	210.4	208.0	206.8	204.5	203.3	200.9	198.6	192.7	189.1	183.2
60°	184.4	183.2	183.2	180.8	178.5	176.1	174.9	171.4	169.0	163.1	158.4
62.5°	160.8	160.8	158.4	158.4	153.7	153.7	152.5	148.9	145.4	139.5	137.1
65°	138.3	138.3	137.1	135.9	132.4	131.2	130.0	126.5	122.9	119.4	115.8
67.5°	118.2	118.2	115.8	114.7	112.3	111.1	108.7	106.4	102.8	99.3	95.7
70°	99.3	98.1	96.9	95.7	93.4	92.2	89.8	87.5	83.9	81.6	78.0
72.5°	80.4	80.4	79.2	76.8	75.6	74.5	73.3	70.9	67.4	63.8	61.5
75°	62.6	62.6	62.6	60.3	57.9	56.7	56.7	54.4	52.0	48.5	46.1
77.5°	48.5	47.3	46.1	46.1	43.7	42.6	41.4	40.2	36.6	35.5	33.1
80°	33.1	34.3	33.1	31.9	30.7	29.6	29.6	27.2	26.0	23.6	21.3
82.5°	22.5	21.3	21.3	20.1	20.1	18.9	18.9	16.5	15.4	14.2	13.0
85°	11.8	11.8	10.6	10.6	10.6	9.5	9.5	8.3	8.3	7.1	5.9
87.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.4	2.4	2.4
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°	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6
2.5°	801.3	798.9	797.7	797.7	796.5	795.4	794.2	793.0	790.6	790.6	788.3
5°	807.2	804.8	803.6	800.1	797.7	797.7	793.0	791.8	788.3	785.9	783.5
7.5°	811.9	807.2	803.6	800.1	797.7	795.4	790.6	785.9	781.2	776.5	774.1
10°	811.9	807.2	801.3	795.4	793.0	790.6	784.7	777.6	771.7	767.0	761.1
12.5°	809.6	802.5	795.4	790.6	785.9	782.4	775.3	768.2	761.1	751.6	746.9
15°	802.5	793.0	785.9	777.6	774.1	768.2	762.3	751.6	743.4	735.1	729.2
17.5°	788.3	776.5	768.2	759.9	754.0	750.5	741.0	731.5	722.1	712.6	705.5
20°	767.0	756.4	746.9	736.3	731.5	726.8	715.0	705.5	696.1	685.4	678.3
22.5°	741.0	730.4	717.4	709.1	702.0	696.1	685.4	674.8	665.3	655.9	646.4
25°	709.1	698.4	686.6	673.6	668.9	663.0	651.2	640.5	629.9	619.2	611.0
27.5°	674.8	660.6	651.2	637.0	632.3	626.3	613.3	601.5	592.1	583.8	574.3
30°	633.4	622.8	609.8	596.8	592.1	586.2	575.5	564.9	555.4	546.0	536.5
32.5°	588.5	577.9	564.9	555.4	548.3	543.6	533.0	523.6	514.2	504.7	496.4
35°	541.2	529.4	520.1	510.6	504.7	498.8	488.2	479.9	472.8	464.5	456.3
37.5°	492.9	484.6	475.2	464.5	458.6	453.9	445.6	436.2	430.2	423.2	417.2
40°	445.6	436.2	427.9	418.4	413.7	410.2	401.9	394.8	388.9	383.0	379.4
42.5°	397.2	388.9	380.6	374.7	371.1	367.6	361.7	353.4	349.9	344.0	340.4
45°	352.2	345.1	339.2	331.0	328.6	326.2	319.1	313.2	309.7	306.1	303.8
47.5°	309.7	305.0	297.9	293.1	289.6	287.2	282.5	277.8	274.2	271.9	269.5
50°	273.0	267.1	262.4	257.7	255.3	251.8	247.0	244.7	242.3	239.9	239.9
52.5°	238.8	232.9	228.1	224.6	222.2	219.9	216.3	215.1	212.8	212.8	211.6
55°	206.8	203.3	198.6	193.8	192.7	191.5	189.1	186.8	185.6	184.4	185.6
57.5°	179.7	176.1	171.4	167.8	166.7	165.5	164.3	161.9	160.8	160.8	160.8
60°	154.8	151.3	147.8	144.2	144.2	141.8	140.7	139.5	138.3	137.1	137.1
62.5°	132.4	128.8	125.3	122.9	121.7	120.6	118.2	117.0	115.8	115.8	114.7
65°	112.3	107.6	106.4	102.8	101.7	100.5	99.3	96.9	95.7	94.6	93.4
67.5°	92.2	89.8	86.3	83.9	82.7	81.6	80.4	78.0	76.8	75.6	73.3
70°	74.5	72.1	69.7	67.4	66.2	65.0	62.6	60.3	59.1	56.7	53.2
72.5°	57.9	55.6	53.2	50.8	49.6	48.5	46.1	43.7	41.4	39.0	36.6
75°	43.7	41.4	37.8	35.5	34.3	34.3	30.7	28.4	26.0	22.5	20.1
77.5°	30.7	27.2	26.0	23.6	22.5	20.1	17.7	15.4	13.0	11.8	9.5
80°	20.1	17.7	15.4	14.2	13.0	11.8	10.6	8.3	5.9	4.7	3.5
82.5°	11.8	10.6	9.5	8.3	7.1	5.9	4.7	4.7	3.5	2.4	1.2
85°	5.9	4.7	3.5	3.5	2.4	2.4	2.4	1.2	1.2	1.2	1.2
87.5°	2.4	1.2	1.2	1.2	1.2	1.2	1.2	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°	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6
2.5°	787.1	785.9	784.7	783.5	783.5	781.2	781.2	780.0	777.6	776.5	776.5
5°	780.0	776.5	774.1	772.9	771.7	768.2	767.0	764.6	762.3	759.9	758.7
7.5°	769.4	763.5	761.1	759.9	756.4	752.8	750.5	746.9	743.4	739.8	738.6
10°	756.4	750.5	744.5	742.2	738.6	736.3	731.5	726.8	723.3	719.7	716.2
12.5°	739.8	732.7	726.8	724.4	720.9	716.2	709.1	706.7	700.8	698.4	693.7
15°	720.9	712.6	706.7	703.2	699.6	692.5	687.8	683.1	677.2	674.8	670.1
17.5°	697.3	687.8	681.9	678.3	676.0	670.1	663.0	657.1	651.2	648.8	645.3
20°	668.9	663.0	654.7	651.2	648.8	641.7	634.6	632.3	627.5	622.8	619.2
22.5°	637.0	631.1	622.8	619.2	618.1	612.2	606.2	602.7	599.2	595.6	592.1
25°	603.9	596.8	589.7	587.3	585.0	580.2	575.5	573.2	569.6	567.2	564.9
27.5°	568.4	561.3	555.4	551.9	549.5	546.0	543.6	541.2	538.9	536.5	535.3
30°	530.6	523.6	518.9	516.5	514.2	513.0	509.4	508.3	507.1	504.7	505.9
32.5°	492.9	487.0	482.3	478.7	478.7	476.3	475.2	475.2	474.0	474.0	474.0
35°	451.5	448.0	444.4	443.2	442.1	440.9	439.7	440.9	439.7	440.9	442.1
37.5°	413.7	410.2	407.8	406.6	405.4	406.6	405.4	405.4	406.6	409.0	410.2
40°	374.7	372.3	370.0	371.1	370.0	370.0	370.0	373.5	374.7	375.9	377.1
42.5°	338.1	335.7	334.5	334.5	335.7	334.5	336.9	338.1	340.4	344.0	346.3
45°	302.6	301.4	301.4	302.6	301.4	303.8	303.8	306.1	309.7	312.0	314.4
47.5°	269.5	269.5	269.5	270.7	270.7	271.9	274.2	275.4	277.8	280.1	282.5
50°	238.8	239.9	241.1	241.1	241.1	243.5	245.9	247.0	248.2	249.4	252.9
52.5°	211.6	212.8	212.8	213.9	215.1	216.3	217.5	219.9	221.0	223.4	224.6
55°	185.6	185.6	187.9	189.1	189.1	189.1	191.5	191.5	193.8	195.0	197.4
57.5°	160.8	161.9	161.9	163.1	163.1	164.3	165.5	166.7	167.8	169.0	170.2
60°	137.1	137.1	137.1	138.3	139.5	140.7	139.5	141.8	141.8	144.2	145.4
62.5°	114.7	115.8	115.8	115.8	115.8	115.8	115.8	117.0	118.2	119.4	120.6
65°	93.4	93.4	93.4	92.2	93.4	92.2	93.4	94.6	94.6	95.7	96.9
67.5°	72.1	72.1	69.7	69.7	70.9	70.9	70.9	70.9	69.7	72.1	72.1
70°	52.0	50.8	49.6	48.5	48.5	47.3	47.3	46.1	46.1	46.1	46.1
72.5°	34.3	31.9	29.6	28.4	27.2	27.2	24.8	23.6	24.8	24.8	24.8
75°	17.7	15.4	14.2	13.0	11.8	11.8	10.6	10.6	10.6	10.6	10.6
77.5°	7.1	5.9	4.7	4.7	3.5	3.5	3.5	3.5	3.5	3.5	3.5
80°	2.4	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
85°	1.2	0.0	0.0	1.2	0.0	1.2	1.2	1.2	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



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CATALOG NUMBER: HC820D010-HM80520927-81WWBB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	790.6	790.6	790.6	790.6	790.6	790.6	790.6	790.6
2.5°	775.3	775.3	774.1	775.3	772.9	774.1	772.9	772.9
5°	757.5	755.2	755.2	755.2	754.0	754.0	752.8	752.8
7.5°	736.3	735.1	733.9	732.7	731.5	730.4	730.4	730.4
10°	715.0	712.6	712.6	711.4	709.1	707.9	707.9	707.9
12.5°	690.2	689.0	687.8	687.8	683.1	684.3	683.1	683.1
15°	666.5	665.3	665.3	661.8	659.4	659.4	659.4	658.3
17.5°	641.7	640.5	639.3	637.0	634.6	634.6	633.4	634.6
20°	615.7	614.5	612.2	612.2	611.0	609.8	607.4	608.6
22.5°	589.7	587.3	586.2	586.2	585.0	585.0	582.6	582.6
25°	562.5	561.3	560.1	561.3	559.0	559.0	556.6	556.6
27.5°	534.1	533.0	533.0	533.0	531.8	533.0	531.8	531.8
30°	505.9	505.9	504.7	504.7	505.9	504.7	505.9	507.1
32.5°	475.2	475.2	476.3	476.3	477.5	477.5	477.5	477.5
35°	443.2	445.6	445.6	446.8	448.0	449.2	449.2	450.3
37.5°	413.7	414.9	416.1	417.2	419.6	419.6	419.6	419.6
40°	381.8	383.0	385.3	384.2	388.9	390.1	388.9	388.9
42.5°	348.7	351.1	352.2	354.6	355.8	358.1	359.3	359.3
45°	318.0	319.1	321.5	323.9	325.0	328.6	328.6	328.6
47.5°	286.0	288.4	289.6	292.0	293.1	296.7	297.9	296.7
50°	255.3	257.7	260.0	260.0	263.6	264.8	267.1	268.3
52.5°	225.8	226.9	229.3	230.5	232.9	235.2	236.4	237.6
55°	197.4	198.6	200.9	200.9	204.5	205.7	208.0	208.0
57.5°	171.4	172.6	174.9	173.8	176.1	178.5	178.5	177.3
60°	146.6	146.6	146.6	148.9	150.1	151.3	152.5	152.5
62.5°	120.6	122.9	124.1	124.1	125.3	126.5	126.5	125.3
65°	96.9	99.3	100.5	100.5	101.7	101.7	101.7	102.8
67.5°	73.3	73.3	73.3	74.5	73.3	73.3	73.3	73.3
70°	46.1	46.1	46.1	46.1	44.9	46.1	46.1	47.3
72.5°	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8
75°	10.6	10.6	10.6	11.8	10.6	10.6	10.6	10.6
77.5°	4.7	3.5	4.7	4.7	3.5	3.5	3.5	3.5
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
85°	0.0	1.2	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)