

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: P593548

Luminaire Tested: **HC810D010-HM80520950-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P593548
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: HC810D010-HM80520950-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1035.6 lumens
Efficiency: N/A
Efficacy: 104.6 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

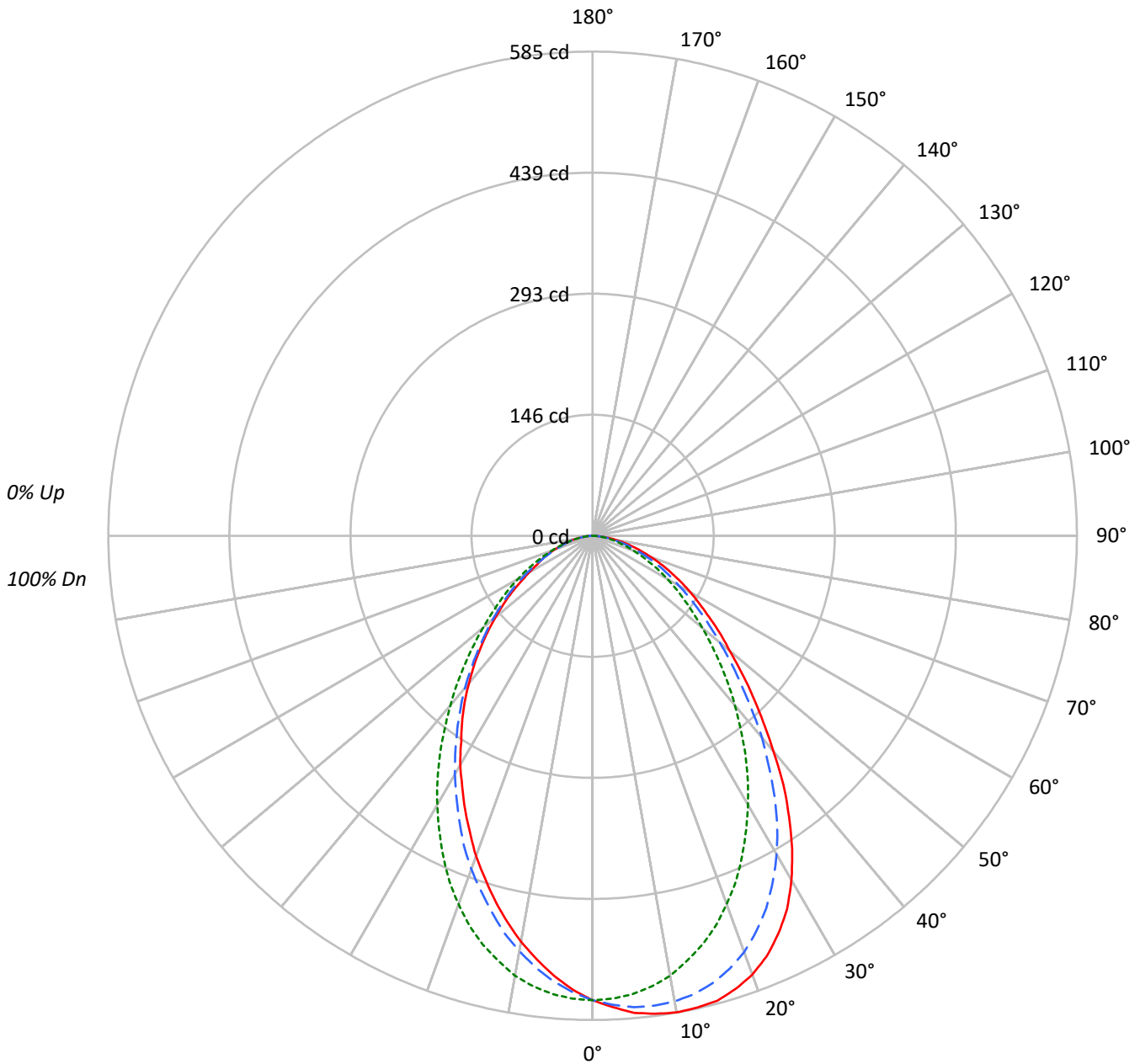
Input Watts (W): 9.9
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	17302	17302	17302
5°	17910	17204	16520
10°	18311	16902	15593
15°	18567	16336	14557
20°	18514	15541	13517
25°	18057	14532	12409
30°	17105	13367	11383
35°	15562	12095	10348
40°	13670	10756	9347
45°	11918	9463	8334
50°	10372	8290	7340
55°	9252	7285	6387
60°	8406	6383	5446
65°	7552	5553	4947
70°	6726	4733	4463
75°	5898	3991	3813
80°	4990	3250	3374
85°	3786	2441	2689



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.6	5.1
10°-20°	144.8	14.0
20°-30°	201.0	19.4
30°-40°	207.8	20.1
40°-50°	174.0	16.8
50°-60°	126.3	12.2
60°-70°	79.7	7.7
70°-80°	39.5	3.8
80°-90°	9.8	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°	398.4	38.5
0°-40°	606.2	58.5
0°-60°	906.6	87.5
0°-90°	1035.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1035.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	561	561	561	561	561	
5°	579	572	556	540	534	55
15°	582	560	512	470	456	164
25°	531	496	427	381	365	243
35°	413	383	321	285	275	257
45°	273	254	217	196	191	211
55°	172	157	136	124	119	155
65°	104	91	76	67	68	103
75°	50	41	34	32	32	53
85°	11	8	7	8	8	13
90°	0	0	0	0	0	



TEST NUMBER: P593548

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1
2.5°	570.2	570.2	571.1	570.2	570.2	570.2	569.5	569.5	568.8	568.8	567.2
5°	578.6	577.1	578.6	577.1	577.1	577.1	576.4	574.8	574.1	572.5	571.8
7.5°	582.5	581.6	581.6	580.9	580.9	580.2	579.4	578.6	575.6	574.8	572.5
10°	584.8	583.9	583.9	583.2	581.6	581.6	580.2	579.4	575.6	574.1	571.1
12.5°	583.9	583.9	583.9	583.2	580.9	580.2	578.6	576.4	573.4	570.2	567.2
15°	581.6	581.6	580.2	579.4	577.1	575.6	574.8	571.1	567.9	564.2	559.7
17.5°	574.1	574.1	573.4	571.8	569.5	567.9	566.5	562.7	559.7	553.5	549.0
20°	564.2	563.4	562.7	560.4	558.1	557.4	555.1	549.7	545.9	541.4	535.3
22.5°	549.7	549.0	548.2	546.7	542.8	541.4	539.8	536.0	529.1	524.6	517.0
25°	530.7	530.7	529.1	526.8	523.1	521.5	519.3	515.4	509.4	502.6	496.4
27.5°	508.6	507.8	505.6	504.0	501.0	498.7	494.9	490.3	484.3	478.9	471.3
30°	480.4	480.4	478.9	476.6	472.7	471.3	468.2	462.9	456.8	449.9	444.6
32.5°	448.5	448.5	446.2	444.6	442.3	438.5	437.8	431.6	426.3	421.1	414.9
35°	413.4	414.2	412.6	409.6	405.8	405.8	404.2	398.9	392.8	387.5	383.0
37.5°	378.4	376.1	375.4	373.8	371.5	368.5	367.0	364.7	359.4	355.6	348.7
40°	339.6	340.3	338.8	337.3	336.6	334.3	333.4	329.7	325.9	321.3	318.3
42.5°	304.6	304.6	304.6	303.0	301.5	299.2	298.5	296.2	291.6	288.6	284.0
45°	273.3	271.1	271.1	270.3	269.5	268.0	265.8	264.2	261.2	258.9	253.5
47.5°	242.9	243.6	242.9	242.1	239.8	239.1	238.4	235.2	232.2	229.9	226.1
50°	216.2	217.8	216.2	216.2	214.7	214.0	212.4	210.1	207.8	204.1	200.3
52.5°	194.1	194.1	193.4	192.7	190.4	188.8	188.1	187.3	183.5	180.4	177.4
55°	172.1	172.8	172.8	170.6	169.8	168.3	167.6	165.3	163.7	159.1	156.9
57.5°	153.0	152.3	153.0	151.5	150.0	148.4	147.7	146.2	143.9	140.9	137.7
60°	136.3	134.7	134.7	134.0	132.5	131.7	130.2	127.9	125.6	122.6	120.3
62.5°	119.5	118.8	118.0	117.2	115.8	114.9	114.2	111.9	109.6	107.3	105.1
65°	103.5	103.5	102.8	101.2	100.5	99.8	98.9	97.5	94.4	92.9	90.6
67.5°	89.1	88.3	88.3	86.8	85.2	84.5	84.5	82.9	80.7	78.4	76.9
70°	74.6	75.4	74.6	73.8	72.4	72.4	70.8	70.1	67.0	66.2	63.9
72.5°	61.7	61.7	60.9	60.9	59.4	58.7	58.7	57.1	55.5	54.1	52.5
75°	49.5	49.5	49.5	48.7	48.0	46.4	46.4	45.7	44.1	42.7	41.1
77.5°	38.8	38.1	38.1	37.3	36.5	35.8	35.8	35.0	33.5	32.7	31.3
80°	28.1	27.4	27.4	27.4	25.8	26.7	25.8	25.1	24.4	23.6	22.8
82.5°	18.3	19.0	19.0	18.3	17.5	17.5	17.5	16.7	16.7	16.0	15.3
85°	10.7	10.7	10.7	10.7	9.9	9.9	9.9	9.1	9.1	9.1	8.4
87.5°	4.6	4.6	4.6	4.6	4.6	4.6	3.8	3.8	3.8	3.8	3.8
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°	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1
2.5°	567.2	565.7	564.9	564.2	564.2	563.4	562.7	561.1	561.1	559.7	558.8
5°	570.2	567.9	566.5	564.9	564.2	562.7	561.1	558.8	558.1	555.8	553.5
7.5°	571.1	567.2	565.7	562.7	561.1	559.7	556.5	554.2	551.2	549.0	545.9
10°	567.9	564.9	561.1	557.4	556.5	554.2	549.7	546.7	542.8	539.8	535.3
12.5°	563.4	558.8	555.1	550.5	548.2	545.9	541.4	536.8	531.4	526.1	521.5
15°	555.8	550.5	545.1	539.8	536.8	534.5	529.1	523.8	518.5	511.7	507.1
17.5°	544.4	538.3	533.0	526.1	523.1	520.8	514.0	507.8	501.0	494.1	489.6
20°	530.0	522.3	516.3	508.6	506.3	502.6	495.7	488.9	481.2	473.6	468.2
22.5°	510.8	503.3	496.4	488.9	485.0	481.2	474.3	465.9	458.3	452.2	446.9
25°	488.9	482.0	473.6	466.7	462.2	457.6	449.9	443.1	436.2	427.1	421.8
27.5°	464.5	456.0	449.9	440.8	436.2	433.2	424.8	415.7	409.6	401.2	395.1
30°	437.0	429.4	422.5	413.4	408.8	405.8	398.2	389.8	383.7	375.4	369.3
32.5°	408.1	399.7	391.4	385.2	380.0	376.8	368.5	363.1	355.6	348.7	341.8
35°	376.8	368.5	362.4	354.0	351.0	348.0	341.1	334.3	327.4	321.3	316.0
37.5°	343.4	337.3	330.4	324.3	322.0	319.0	310.6	304.6	299.2	293.2	288.6
40°	310.6	305.3	300.7	294.6	290.9	288.6	282.5	277.2	271.1	267.2	262.6
42.5°	280.9	274.9	270.3	265.8	261.9	259.6	254.3	250.5	245.9	242.1	236.8
45°	249.8	246.7	241.4	237.5	235.2	232.2	228.4	223.8	220.1	217.0	213.2
47.5°	222.4	219.2	215.5	211.0	209.4	207.1	203.3	200.3	197.2	194.1	190.4
50°	197.2	193.4	190.4	187.3	185.8	183.5	179.7	178.1	175.9	172.8	170.6
52.5°	174.4	171.3	168.3	164.4	163.7	162.1	159.9	156.9	154.6	153.0	151.5
55°	153.7	150.7	148.4	145.4	144.6	143.2	140.0	138.6	137.0	135.5	134.0
57.5°	135.5	132.5	129.5	127.9	126.3	124.9	124.0	121.8	120.3	119.5	118.0
60°	118.8	115.8	113.5	111.2	110.3	109.6	108.1	106.6	105.1	103.5	102.8
62.5°	102.8	99.8	98.2	96.6	95.2	95.2	93.6	92.1	90.6	89.8	88.3
65°	88.3	86.8	84.5	82.2	81.5	81.5	79.2	78.4	77.6	76.1	74.6
67.5°	74.6	73.1	70.8	70.1	69.2	68.5	67.8	66.2	64.7	63.9	62.4
70°	62.4	60.9	59.4	58.7	57.8	57.1	55.5	54.8	53.2	52.5	51.8
72.5°	50.2	49.5	48.0	47.2	46.4	45.7	45.0	44.1	42.7	41.8	41.1
75°	40.4	39.5	38.1	37.3	36.5	36.5	35.8	34.3	33.5	33.5	32.7
77.5°	30.4	29.7	29.0	28.1	27.4	27.4	26.7	25.8	25.1	25.1	24.4
80°	22.1	21.3	20.6	20.6	20.6	19.8	19.0	19.0	18.3	18.3	17.5
82.5°	14.4	14.4	13.7	13.7	13.7	13.0	13.0	12.1	12.1	12.1	12.1
85°	8.4	8.4	8.4	7.6	7.6	7.6	7.6	7.6	7.6	6.9	7.6
87.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1
2.5°	558.1	557.4	555.8	555.8	554.2	554.2	553.5	552.8	552.0	551.2	550.5
5°	552.8	549.7	548.2	547.4	545.9	545.1	542.8	541.4	540.5	539.1	537.5
7.5°	542.8	539.8	536.8	536.0	535.3	532.2	530.0	527.7	526.1	524.6	523.1
10°	531.4	528.4	524.6	523.1	521.5	517.7	514.7	512.4	509.4	506.3	505.6
12.5°	517.7	513.1	508.6	507.1	504.8	501.0	498.0	494.1	491.9	488.0	487.3
15°	501.7	496.4	492.6	488.9	487.3	483.4	478.2	475.0	470.5	469.0	465.2
17.5°	482.7	477.4	472.0	470.5	468.2	462.9	457.6	453.8	449.2	446.9	444.6
20°	462.9	456.0	450.8	449.2	446.2	441.6	436.2	432.5	428.6	424.1	421.8
22.5°	440.1	432.5	427.9	424.1	423.3	417.9	411.9	408.8	405.8	401.9	398.9
25°	414.9	408.1	402.8	399.7	398.2	393.7	389.1	385.2	380.7	378.4	374.5
27.5°	389.1	384.5	377.7	374.5	372.3	368.5	363.1	360.8	356.3	353.3	351.0
30°	364.0	357.1	353.3	349.4	347.1	343.4	338.8	336.6	332.7	329.7	327.4
32.5°	336.6	332.0	326.6	325.1	322.0	318.3	315.2	311.4	308.3	305.3	304.6
35°	311.4	305.3	300.0	298.5	296.2	292.3	290.9	288.6	284.8	284.0	280.9
37.5°	284.0	280.9	274.9	272.6	271.8	268.8	265.8	264.2	261.9	259.6	258.9
40°	258.1	254.3	251.2	248.9	247.5	245.2	242.1	241.4	239.8	236.8	236.1
42.5°	233.8	229.9	226.9	226.1	223.8	221.5	220.1	217.8	217.0	216.2	214.7
45°	210.1	207.8	204.8	204.1	203.3	200.3	198.7	197.2	195.7	195.0	193.4
47.5°	188.8	186.6	184.3	183.5	182.0	181.3	179.0	178.1	175.9	175.1	174.4
50°	168.3	166.7	165.3	164.4	163.0	162.1	160.7	159.1	157.6	156.9	156.0
52.5°	150.0	148.4	146.9	146.2	145.4	143.9	142.3	140.9	140.0	139.3	138.6
55°	132.5	130.9	130.2	129.5	128.6	127.9	125.6	124.9	124.0	123.3	121.8
57.5°	116.5	114.9	113.5	113.5	112.6	111.9	110.3	108.9	108.9	107.3	105.8
60°	102.0	100.5	98.9	98.2	97.5	95.9	95.2	94.4	93.6	92.9	91.4
62.5°	86.8	86.1	84.5	84.5	82.9	82.2	81.5	80.7	79.9	78.4	77.6
65°	73.8	73.1	71.5	70.8	70.8	70.1	68.5	67.8	67.0	67.0	66.2
67.5°	61.7	60.9	59.4	58.7	58.7	57.8	57.1	57.1	56.4	55.5	56.4
70°	51.0	49.5	49.5	48.7	48.7	48.0	47.2	47.2	47.2	48.0	48.0
72.5°	40.4	39.5	38.8	38.8	38.8	38.8	38.1	38.1	38.8	39.5	39.5
75°	32.0	31.3	31.3	31.3	30.4	30.4	31.3	31.3	32.0	32.0	32.0
77.5°	23.6	23.6	23.6	23.6	23.6	23.6	24.4	24.4	25.1	25.1	25.1
80°	17.5	17.5	17.5	17.5	17.5	18.3	18.3	18.3	18.3	18.3	19.0
82.5°	12.1	12.1	12.1	12.1	12.1	12.1	12.1	13.0	13.0	13.0	13.0
85°	6.9	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
87.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	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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CATALOG NUMBER: HC810D010-HM80520950-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	561.1	561.1	561.1	561.1	561.1	561.1	561.1	561.1
2.5°	549.7	549.7	549.7	550.5	549.0	549.0	549.0	549.0
5°	536.8	536.0	535.3	536.0	534.5	534.5	533.7	533.7
7.5°	520.8	520.0	519.3	519.3	517.7	517.7	517.0	516.3
10°	503.3	501.7	502.6	501.0	500.3	499.4	498.7	498.0
12.5°	484.3	482.7	482.0	480.4	478.9	478.2	478.9	477.4
15°	463.6	461.3	460.6	459.0	457.6	456.8	456.8	456.0
17.5°	440.8	439.3	438.5	437.0	436.2	434.8	433.9	433.2
20°	419.5	415.7	416.5	414.9	414.2	411.1	411.1	411.9
22.5°	395.9	393.7	392.1	390.5	389.8	388.2	388.2	387.5
25°	372.3	370.0	369.3	367.7	367.0	365.4	364.7	364.7
27.5°	349.4	346.4	346.4	344.9	343.4	342.6	341.8	341.1
30°	325.1	322.9	322.0	322.0	321.3	321.3	319.0	319.7
32.5°	302.3	300.7	300.0	298.5	298.5	297.7	297.7	295.5
35°	279.5	277.2	277.9	276.3	275.6	274.9	275.6	274.9
37.5°	257.3	255.8	255.8	254.3	254.3	253.5	252.8	254.3
40°	235.2	234.5	233.8	232.9	233.8	232.9	231.5	232.2
42.5°	213.2	213.2	212.4	212.4	211.7	211.7	211.7	211.7
45°	193.4	192.7	192.7	191.8	191.8	191.8	191.8	191.1
47.5°	173.6	172.8	172.8	172.8	172.1	172.1	171.3	172.1
50°	154.6	154.6	153.7	153.7	154.6	153.7	153.0	153.0
52.5°	137.0	137.0	136.3	136.3	135.5	134.7	135.5	135.5
55°	121.0	120.3	119.5	119.5	118.8	118.0	118.0	118.8
57.5°	105.8	105.1	104.3	104.3	102.8	102.0	102.0	102.0
60°	91.4	89.8	89.8	89.1	89.1	88.3	88.3	88.3
62.5°	77.6	76.9	76.9	76.9	76.9	76.1	76.1	76.1
65°	66.2	66.2	66.2	67.0	67.0	67.8	67.8	67.8
67.5°	57.1	57.8	57.8	57.8	58.7	58.7	58.7	57.8
70°	48.7	48.7	48.7	49.5	49.5	49.5	49.5	49.5
72.5°	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4
75°	32.0	32.7	32.7	32.7	32.0	32.7	32.7	32.0
77.5°	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1
80°	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
82.5°	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
85°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
87.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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)