

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: P593549

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

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593549  
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: HC810D010-HM80520950-81WWWB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1078.2 lumens  
Efficiency: N/A  
Efficacy: 108.9 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

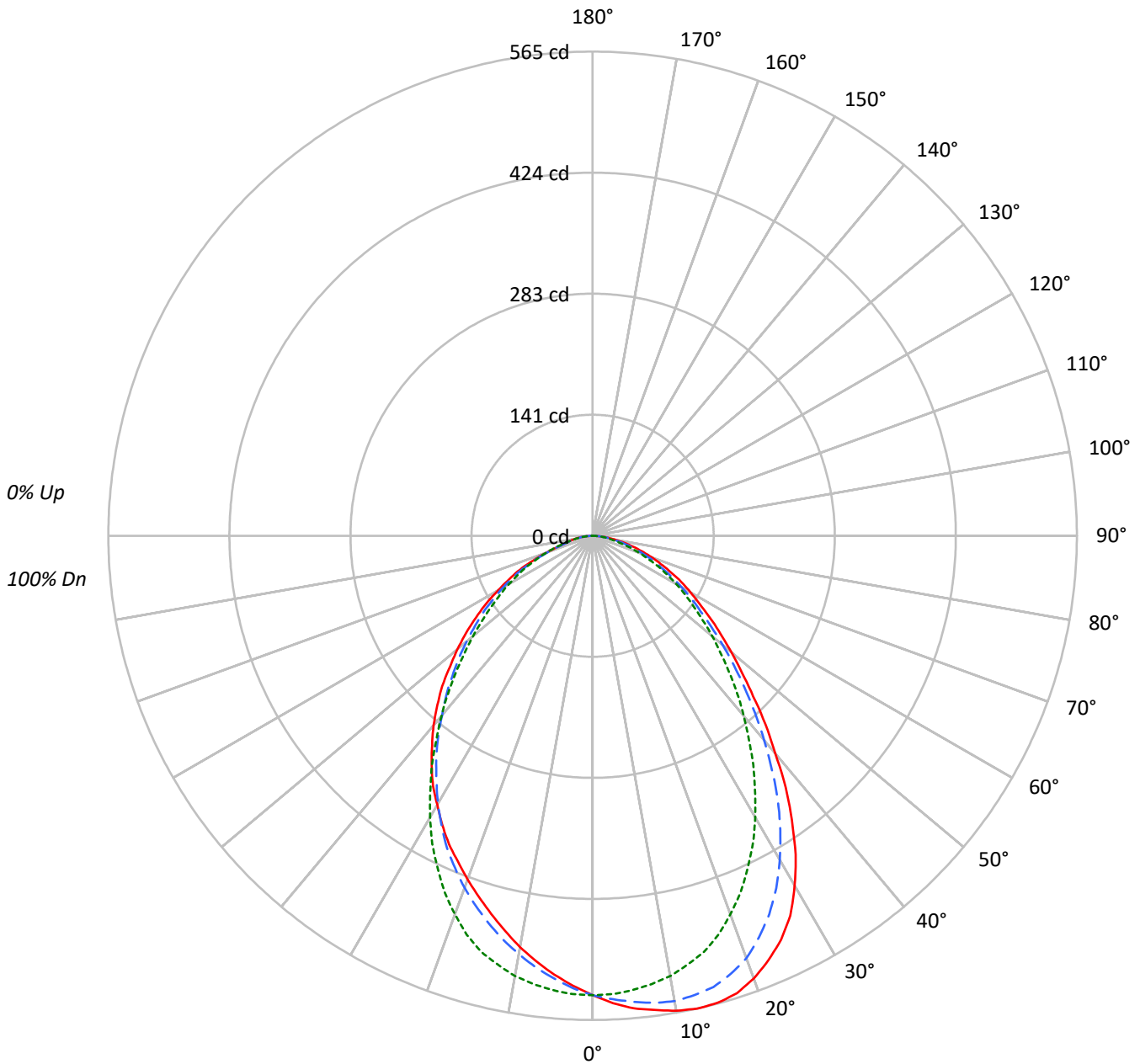
Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	16531	16531	16531
5°	17136	16474	15910
10°	17622	16335	15261
15°	18012	16045	14586
20°	18042	15420	13996
25°	17696	14559	13501
30°	16785	13502	12907
35°	15250	12298	12325
40°	13336	11038	11617
45°	11556	9829	10824
50°	10122	8731	9868
55°	9010	7736	8924
60°	8122	6951	7845
65°	7333	6114	6830
70°	6591	5148	5085
75°	5802	4087	3813
80°	4866	3374	3658
85°	3786	2972	3220



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	50.6	4.7
10°-20°	142.4	13.2
20°-30°	203.6	18.9
30°-40°	216.3	20.1
40°-50°	186.2	17.3
50°-60°	139.2	12.9
60°-70°	88.8	8.2
70°-80°	40.4	3.7
80°-90°	10.6	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°	396.6	36.8
0°-40°	612.9	56.8
0°-60°	938.4	87.0
0°-90°	1078.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1078.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	536	536	536	536	536	
5°	554	546	532	518	514	53
15°	564	545	503	468	457	159
25°	520	487	428	402	397	238
35°	405	377	327	318	327	252
45°	265	250	225	232	248	206
55°	168	154	144	156	166	151
65°	100	89	84	88	94	100
75°	49	42	34	31	32	52
85°	11	9	8	9	9	13
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°	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1
2.5°	545.9	544.5	545.2	544.5	545.2	545.2	543.7	543.7	543.7	543.7	541.4
5°	553.6	552.8	552.8	552.1	551.4	552.1	551.4	550.5	549.1	548.2	545.9
7.5°	558.2	558.2	558.2	558.2	557.4	556.6	555.9	554.4	552.8	551.4	549.8
10°	562.8	563.5	562.8	561.9	561.2	559.7	558.9	557.4	555.1	552.8	551.4
12.5°	565.1	565.1	564.2	564.2	562.8	561.9	559.7	557.4	555.1	552.8	549.1
15°	564.2	564.2	563.5	562.8	560.5	559.7	558.2	555.9	552.1	549.1	545.2
17.5°	559.7	558.9	557.4	557.4	554.4	553.6	552.1	549.1	545.2	540.7	536.1
20°	549.8	549.8	549.1	548.2	545.2	542.9	541.4	537.7	534.5	529.2	524.7
22.5°	536.1	537.7	536.1	534.5	530.8	530.0	527.7	523.1	518.5	512.5	507.1
25°	520.1	519.4	518.5	517.1	514.0	512.5	509.4	504.8	500.3	493.4	487.4
27.5°	499.6	496.5	496.5	493.4	491.1	488.9	487.4	482.8	476.7	471.4	463.7
30°	471.4	472.1	468.3	467.6	463.7	462.3	459.2	454.6	449.3	443.2	437.0
32.5°	440.9	438.6	438.6	435.6	432.5	430.2	429.5	424.2	419.6	413.5	407.4
35°	405.1	405.1	402.8	402.1	399.1	397.5	395.2	392.2	386.8	381.5	376.9
37.5°	370.1	368.5	367.8	366.2	364.0	361.7	361.7	356.4	355.7	349.5	343.4
40°	331.3	332.8	331.3	329.0	328.1	326.7	325.9	322.9	320.6	315.3	311.4
42.5°	298.5	297.0	297.0	296.2	293.2	293.2	291.6	290.2	286.3	284.8	280.2
45°	265.0	266.5	264.2	265.0	261.9	261.9	261.9	258.9	255.9	253.6	250.5
47.5°	236.1	236.8	236.8	234.5	233.8	233.8	232.2	230.8	228.5	225.4	223.1
50°	211.0	211.7	210.2	209.4	207.9	207.1	207.1	204.1	202.5	199.5	198.0
52.5°	188.1	188.1	187.3	187.3	185.0	185.0	183.5	181.3	179.7	178.1	174.4
55°	167.6	167.6	166.7	166.0	166.0	163.7	163.0	160.7	159.1	156.1	153.9
57.5°	147.7	148.4	147.7	147.0	146.2	145.4	143.9	141.6	140.2	137.9	136.3
60°	131.7	131.7	131.0	130.2	128.7	127.9	127.2	125.6	123.3	121.9	119.6
62.5°	116.5	115.8	115.0	114.2	112.7	112.7	111.2	109.6	107.3	105.9	104.3
65°	100.5	100.5	99.8	99.8	99.0	97.5	96.8	95.9	92.9	92.2	89.1
67.5°	86.1	86.8	85.3	85.3	83.8	83.8	83.1	80.8	79.9	78.5	76.9
70°	73.1	73.1	73.1	72.4	70.8	70.1	69.4	67.8	67.1	65.5	63.9
72.5°	60.1	60.1	59.4	59.4	58.7	57.8	57.1	55.5	55.5	54.1	52.5
75°	48.7	48.7	48.0	47.2	46.4	46.4	45.7	45.0	43.4	42.7	41.8
77.5°	37.3	37.3	37.3	36.5	35.8	35.8	35.8	34.3	32.7	32.7	32.0
80°	27.4	27.4	26.7	26.7	25.8	25.8	25.8	25.1	24.4	23.6	22.8
82.5°	18.3	18.3	18.3	18.3	17.5	17.5	17.5	16.7	16.0	16.0	16.0
85°	10.7	10.7	10.7	10.7	9.9	9.9	9.9	9.9	9.9	9.1	9.1
87.5°	4.6	3.8	4.6	3.8	4.6	3.8	4.6	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°	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1
2.5°	542.2	541.4	540.7	539.9	539.9	539.1	537.7	536.8	536.1	535.4	535.4
5°	545.2	544.5	542.9	541.4	540.7	539.1	537.7	536.1	534.5	532.2	531.5
7.5°	547.5	545.2	543.7	540.7	539.9	538.4	536.1	533.8	530.8	527.7	525.4
10°	547.5	544.5	542.2	538.4	536.8	535.4	532.2	528.5	524.7	521.7	517.8
12.5°	545.9	542.2	538.4	534.5	532.2	530.0	525.4	521.7	517.1	512.5	509.4
15°	540.7	536.1	531.5	527.0	524.7	521.7	517.1	511.7	507.1	502.6	497.3
17.5°	530.8	526.2	520.8	515.5	512.5	510.2	503.4	499.6	492.7	488.1	483.6
20°	517.8	512.5	505.7	500.3	496.5	494.3	488.9	482.0	476.7	469.9	465.3
22.5°	501.1	494.3	487.4	482.0	478.3	475.2	468.3	461.4	456.9	450.8	445.5
25°	481.3	474.4	467.6	459.9	456.2	453.0	447.0	440.9	434.8	427.9	423.3
27.5°	457.6	450.0	443.9	437.0	433.3	428.8	421.9	415.8	409.6	405.1	399.1
30°	431.8	423.3	417.3	410.5	406.6	402.8	395.9	389.9	384.5	379.2	376.2
32.5°	400.5	394.5	388.4	381.5	378.5	376.2	369.4	363.2	357.1	352.5	350.3
35°	370.8	364.0	358.7	352.5	348.8	346.5	340.4	335.1	332.0	326.7	323.6
37.5°	339.7	334.3	328.1	322.1	319.9	317.6	313.0	307.6	303.0	299.3	297.7
40°	306.9	302.3	297.0	293.2	290.9	288.6	284.8	281.0	277.9	274.2	272.6
42.5°	275.6	272.6	268.0	263.5	261.2	260.5	255.9	252.8	251.3	249.8	248.2
45°	247.5	242.9	239.9	236.8	234.5	233.1	230.8	228.5	226.9	225.4	223.9
47.5°	220.1	216.2	213.2	211.0	208.7	207.9	206.4	204.1	202.5	202.5	202.5
50°	195.0	191.8	188.8	187.3	186.6	185.0	183.5	182.7	182.0	182.0	182.0
52.5°	172.8	169.8	167.6	166.0	166.0	164.4	163.0	162.1	162.1	162.1	162.1
55°	152.3	150.0	148.4	147.0	145.4	144.7	144.7	144.7	143.9	143.9	144.7
57.5°	134.0	132.5	130.2	128.7	127.9	127.9	127.2	126.5	127.2	127.9	128.7
60°	117.3	115.8	115.0	112.7	112.7	112.7	111.9	111.9	111.9	112.7	113.5
62.5°	102.0	101.3	99.8	99.0	98.2	98.2	97.5	97.5	97.5	97.5	98.2
65°	88.3	86.8	85.3	85.3	85.3	84.5	84.5	83.1	83.8	83.8	83.1
67.5°	75.4	73.9	73.1	72.4	71.6	71.6	70.8	70.1	69.4	69.4	69.4
70°	63.2	61.7	61.7	60.1	60.1	59.4	58.7	58.7	57.8	57.1	56.4
72.5°	51.0	50.2	49.5	48.7	48.7	48.7	48.0	47.2	46.4	45.7	44.1
75°	40.4	40.4	38.8	38.1	38.1	37.3	36.5	35.8	35.0	34.3	33.5
77.5°	31.3	30.4	29.0	28.1	28.1	28.1	27.4	26.7	25.8	25.1	24.4
80°	22.8	22.1	21.3	20.6	20.6	20.6	19.8	19.8	19.0	19.0	19.0
82.5°	15.3	15.3	14.4	14.4	14.4	14.4	13.7	13.7	13.7	13.7	13.7
85°	9.1	9.1	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
87.5°	3.8	3.8	3.8	3.8	3.8	3.8	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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1
2.5°	533.8	533.8	532.2	531.5	530.8	531.5	530.0	529.2	528.5	528.5	527.7
5°	529.2	528.5	525.4	524.7	524.0	523.1	521.7	520.1	518.5	517.8	517.1
7.5°	523.1	520.8	517.8	517.1	516.3	514.0	511.7	510.2	508.0	507.1	505.7
10°	514.8	511.7	509.4	507.1	505.7	503.4	501.1	498.8	495.7	495.0	492.7
12.5°	504.8	501.1	496.5	495.7	493.4	490.4	487.4	485.1	482.8	481.3	479.0
15°	492.7	488.9	484.3	482.0	479.7	477.4	473.7	470.6	468.3	466.0	463.7
17.5°	478.3	473.7	469.9	467.6	466.0	462.3	459.2	455.3	453.0	450.8	448.5
20°	460.7	456.9	451.6	449.3	448.5	445.5	441.6	440.2	437.0	434.8	433.3
22.5°	440.9	437.0	432.5	431.0	427.9	426.5	422.6	421.1	419.6	417.3	416.5
25°	418.8	415.1	411.2	410.5	408.2	406.6	404.4	402.1	402.1	399.8	399.8
27.5°	395.9	392.2	389.1	387.6	386.8	385.4	383.1	382.2	381.5	380.8	380.8
30°	371.7	367.1	365.5	364.8	364.0	362.5	361.7	360.2	361.0	361.7	361.0
32.5°	345.7	344.3	341.1	339.7	340.4	339.7	338.1	339.7	338.8	340.4	341.1
35°	320.6	319.0	317.6	317.6	316.0	316.0	316.0	316.7	318.3	319.0	320.6
37.5°	296.2	293.9	293.2	292.4	293.2	293.2	293.2	294.7	296.2	297.7	300.0
40°	270.3	268.8	268.8	268.8	268.8	271.1	270.3	271.9	273.3	275.6	277.9
42.5°	245.9	245.9	246.8	246.8	246.8	246.8	248.2	250.5	252.8	255.1	257.3
45°	223.1	223.1	223.1	224.7	224.7	225.4	228.5	229.9	231.5	233.8	236.1
47.5°	201.8	201.8	202.5	203.4	204.1	205.7	207.1	209.4	211.7	213.2	215.5
50°	182.0	182.7	184.3	185.8	185.8	186.6	188.8	190.4	191.8	194.1	195.0
52.5°	163.0	164.4	166.0	166.7	167.6	169.0	169.8	172.1	172.8	175.1	175.9
55°	145.4	146.2	148.4	149.3	149.3	150.7	152.3	153.9	156.1	156.1	157.6
57.5°	129.5	130.2	131.7	132.5	131.7	134.0	134.7	136.3	137.0	138.6	139.3
60°	113.5	115.0	115.8	115.8	116.5	117.3	118.8	118.8	120.3	121.9	121.9
62.5°	98.2	99.0	99.8	100.5	101.3	100.5	102.8	102.8	104.3	105.1	106.6
65°	83.8	84.5	84.5	85.3	85.3	86.1	86.1	86.8	87.6	89.1	89.9
67.5°	69.4	69.4	69.4	70.1	69.4	70.1	70.1	70.8	70.8	72.4	73.1
70°	56.4	55.5	54.8	54.8	54.8	54.8	54.1	54.8	54.8	55.5	55.5
72.5°	43.4	42.7	41.8	41.1	41.1	40.4	39.5	40.4	40.4	41.1	41.1
75°	32.7	31.3	31.3	31.3	30.4	30.4	30.4	31.3	31.3	31.3	32.0
77.5°	24.4	24.4	23.6	23.6	23.6	24.4	24.4	25.1	25.1	25.1	25.1
80°	18.3	19.0	19.0	19.0	19.0	19.8	19.8	19.8	19.8	20.6	20.6
82.5°	13.7	13.7	13.7	13.7	14.4	14.4	14.4	14.4	14.4	14.4	14.4
85°	8.4	9.1	9.1	8.4	9.1	9.1	9.1	9.1	9.1	9.1	9.1
87.5°	3.8	3.8	3.8	3.8	3.8	3.8	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):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	536.1	536.1	536.1	536.1	536.1	536.1	536.1	536.1
2.5°	527.0	527.0	527.0	527.0	526.2	526.2	526.2	525.4
5°	515.5	515.5	515.5	514.0	514.8	514.8	513.3	514.0
7.5°	504.1	503.4	502.6	502.6	501.8	501.1	500.3	501.1
10°	491.1	488.9	488.9	488.1	488.1	486.6	486.6	487.4
12.5°	476.7	475.2	475.2	474.4	473.7	472.9	472.1	472.1
15°	462.3	460.7	459.9	459.2	458.4	456.9	457.6	456.9
17.5°	447.7	445.5	445.5	444.7	443.9	442.5	442.5	441.6
20°	431.0	430.2	428.8	429.5	428.8	427.2	426.5	426.5
22.5°	414.2	414.2	413.5	413.5	412.8	411.9	411.2	411.2
25°	398.2	397.5	398.2	398.2	395.9	395.9	395.9	396.8
27.5°	380.0	380.8	380.0	380.0	380.0	380.0	380.8	380.0
30°	361.7	361.7	361.7	362.5	364.0	363.2	363.2	362.5
32.5°	342.0	342.7	342.7	343.4	344.3	345.7	345.7	346.5
35°	322.1	323.6	324.4	323.6	325.9	325.9	327.4	327.4
37.5°	301.6	302.3	303.9	304.6	306.1	306.9	307.6	307.6
40°	279.5	282.5	283.3	284.0	286.3	286.3	287.0	288.6
42.5°	258.9	261.9	262.8	263.5	265.0	267.3	266.5	268.0
45°	239.1	241.4	242.2	242.9	245.2	245.9	245.9	248.2
47.5°	217.8	219.4	220.1	221.6	223.1	224.7	226.2	225.4
50°	196.4	198.8	200.3	201.1	203.4	204.1	204.8	205.7
52.5°	177.4	179.0	179.7	180.4	182.7	183.5	184.3	185.8
55°	159.1	159.9	161.4	160.7	163.0	163.7	164.4	166.0
57.5°	140.9	141.6	142.4	142.4	143.9	145.4	146.2	147.0
60°	123.3	124.9	125.6	125.6	125.6	127.2	127.2	127.2
62.5°	107.3	107.3	108.2	108.2	109.6	109.6	109.6	109.6
65°	90.6	91.4	92.2	92.2	93.6	92.9	94.5	93.6
67.5°	73.1	73.1	74.6	74.6	73.9	74.6	74.6	74.6
70°	55.5	55.5	56.4	56.4	56.4	56.4	56.4	56.4
72.5°	41.1	41.1	41.1	41.8	41.1	41.1	41.8	41.1
75°	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
77.5°	25.1	25.1	25.8	25.8	25.8	25.8	25.8	25.8
80°	20.6	20.6	20.6	20.6	21.3	20.6	20.6	20.6
82.5°	15.3	14.4	15.3	14.4	15.3	15.3	15.3	15.3
85°	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
87.5°	3.8	3.8	3.8	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



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— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)