

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: P593528

Luminaire Tested: **HC810D010-HM80520850-81RWWC**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593528  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC810D010-HM80520850-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1232.8 lumens  
Efficiency: N/A  
Efficacy: 124.5 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.08 / 1.17  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

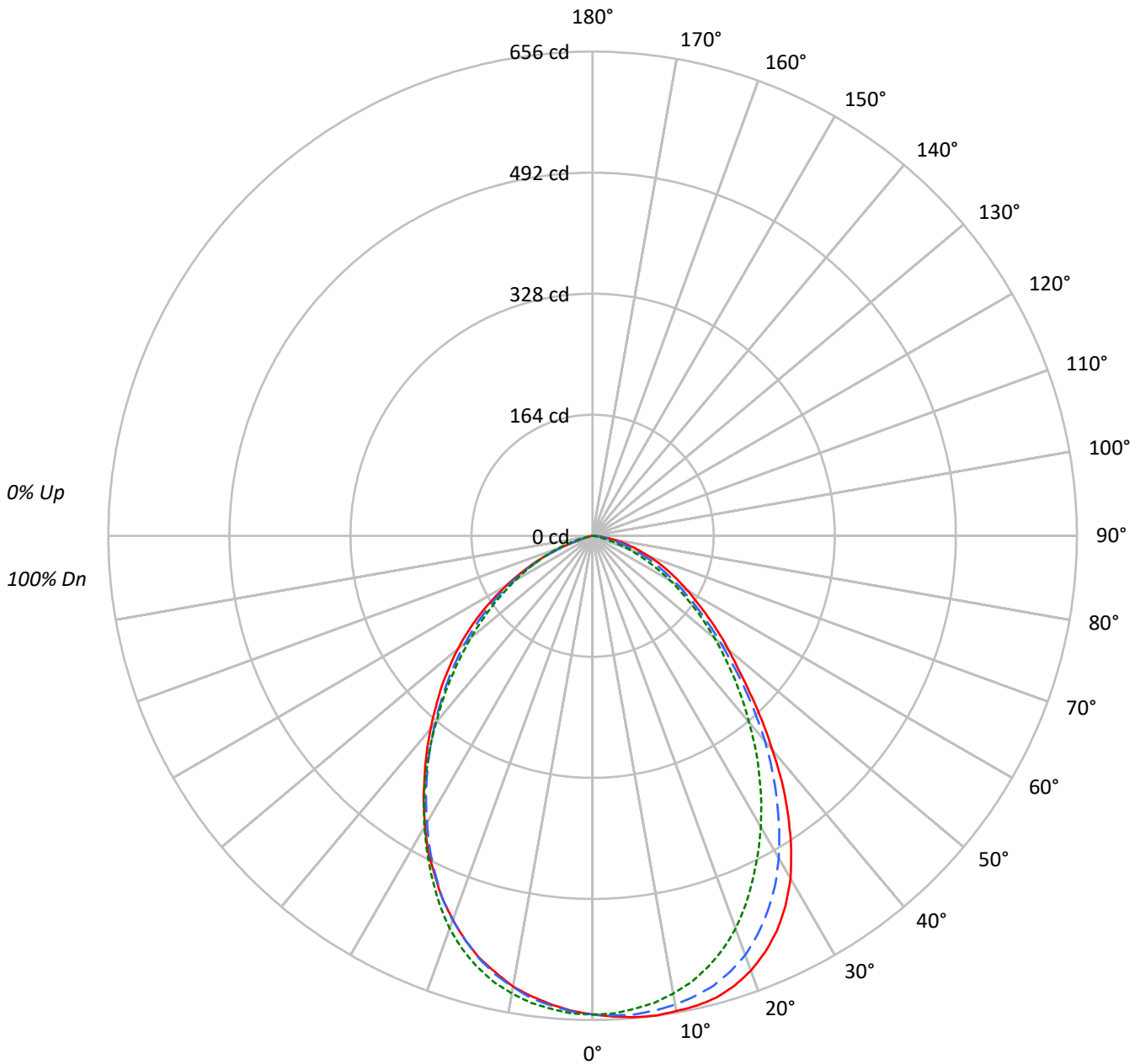
Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88																			
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	85	82	79	77																			
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67																			
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59																			
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52																			
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47																			
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42																			
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38																			
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35																			
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	20000	20000	20000
5°	20266	19916	19730
10°	20475	19714	19417
15°	20680	19298	18909
20°	20575	18587	18160
25°	20098	17471	17237
30°	19089	16222	16158
35°	17377	14802	14933
40°	15232	13248	13735
45°	13139	11783	12612
50°	11509	10343	11422
55°	10199	8892	10053
60°	9183	7481	8332
65°	8282	5998	6384
70°	7258	4364	3507
75°	6183	2276	929
80°	4759	622	142
85°	3078	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	61.2	5.0
10°-20°	172.0	14.0
20°-30°	244.2	19.8
30°-40°	257.0	20.9
40°-50°	218.7	17.7
50°-60°	158.0	12.8
60°-70°	89.9	7.3
70°-80°	28.3	2.3
80°-90°	3.4	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°	477.4	38.7
0°-40°	734.5	59.6
0°-60°	1111.1	90.1
0°-90°	1232.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1232.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	649	649	649	649	649	
5°	655	651	643	639	637	62
15°	648	631	604	593	592	182
25°	591	561	514	505	507	271
35°	462	435	393	390	397	287
45°	301	290	270	277	289	234
55°	190	176	165	175	187	171
65°	114	98	82	81	88	113
75°	52	40	19	9	8	56
85°	9	5	0	0	0	11
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°	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6
2.5°	652.1	652.9	651.2	651.2	652.9	651.2	652.1	652.1	651.2	651.2	650.4
5°	654.7	653.9	653.9	653.9	654.7	652.9	652.1	652.9	651.2	651.2	651.2
7.5°	655.6	655.6	654.7	653.9	653.9	653.9	652.9	652.1	651.2	649.4	648.6
10°	653.9	653.9	654.7	652.9	652.9	651.2	651.2	649.4	649.4	647.8	645.1
12.5°	652.1	651.2	651.2	649.4	649.4	647.8	647.8	645.1	644.3	641.7	639.1
15°	647.8	646.9	645.1	644.3	643.4	642.6	640.8	639.9	637.4	633.9	631.3
17.5°	639.1	638.3	637.4	635.6	633.9	633.1	632.1	629.6	626.1	623.5	619.2
20°	627.0	626.1	626.1	623.5	622.6	620.1	619.2	615.8	613.1	608.0	604.5
22.5°	610.5	611.3	609.7	608.0	606.2	603.6	601.8	598.4	594.0	588.9	584.5
25°	590.7	591.5	589.7	588.0	585.4	583.7	582.0	576.7	572.4	566.4	561.2
27.5°	565.5	565.5	565.5	563.7	559.4	558.6	556.9	551.6	545.6	540.4	535.1
30°	536.1	535.1	535.1	532.6	530.8	527.4	524.8	520.5	516.1	510.1	504.0
32.5°	500.5	501.5	498.8	497.0	494.5	494.5	491.0	487.5	482.4	476.4	470.2
35°	461.6	462.4	460.7	459.9	455.6	454.6	453.8	449.4	445.9	441.6	434.8
37.5°	421.8	420.8	420.0	420.0	417.5	415.7	414.0	411.3	406.2	402.7	399.2
40°	378.4	378.4	378.4	377.5	376.7	375.0	374.1	372.4	368.9	365.4	362.9
42.5°	339.4	339.4	338.6	337.8	336.0	336.9	335.1	333.4	329.9	327.3	325.6
45°	301.3	301.3	301.3	302.2	300.5	297.9	297.9	296.2	294.5	292.7	290.2
47.5°	267.6	270.2	268.4	267.6	268.4	265.0	265.0	263.2	261.6	259.8	256.4
50°	239.9	239.9	239.9	238.1	237.3	237.3	234.6	232.9	232.1	230.3	226.9
52.5°	214.8	213.0	213.0	212.2	211.3	209.6	209.6	207.8	204.3	202.7	200.0
55°	189.7	189.7	188.8	187.9	187.0	186.2	185.3	182.7	181.0	178.4	175.9
57.5°	167.2	168.9	168.0	166.2	164.6	164.6	162.8	161.1	158.4	155.9	153.3
60°	148.9	148.1	148.1	147.2	145.4	144.6	143.8	141.1	138.6	135.9	133.4
62.5°	129.9	129.9	129.9	128.1	126.5	125.6	124.6	123.0	119.5	117.0	115.2
65°	113.5	112.6	111.7	110.8	110.0	108.3	107.3	105.7	103.0	100.5	97.8
67.5°	97.0	96.2	96.2	95.3	92.7	91.8	91.8	89.2	86.5	84.0	81.4
70°	80.5	80.5	80.5	78.9	77.9	77.0	76.2	74.5	71.9	69.2	66.7
72.5°	66.7	65.9	65.9	64.9	62.4	61.5	60.6	58.9	56.3	54.6	52.8
75°	51.9	51.9	51.1	50.2	49.4	48.4	47.6	45.9	43.3	40.7	39.8
77.5°	39.8	38.9	38.9	38.1	36.4	35.5	35.5	33.8	31.1	29.4	27.8
80°	26.8	27.8	26.8	26.0	25.1	24.3	23.4	22.5	20.8	19.1	17.3
82.5°	16.5	17.3	16.5	16.5	15.6	14.7	14.7	13.0	12.1	11.3	10.3
85°	8.7	8.7	8.7	8.7	7.8	7.8	7.8	7.0	6.0	5.2	5.2
87.5°	2.6	3.5	2.6	2.6	2.6	2.6	2.6	2.6	1.7	1.7	1.7
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°	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6
2.5°	651.2	650.4	649.4	649.4	649.4	649.4	649.4	648.6	647.8	647.8	647.8
5°	649.4	649.4	649.4	648.6	647.8	647.8	646.1	645.1	644.3	643.4	642.6
7.5°	647.8	646.1	645.1	644.3	643.4	643.4	641.7	639.9	639.9	638.3	636.5
10°	642.6	641.7	639.9	638.3	637.4	636.5	634.8	632.1	631.3	629.6	627.8
12.5°	636.5	634.8	633.1	629.6	628.8	627.8	624.4	621.8	620.1	619.2	614.8
15°	628.8	625.3	622.6	618.3	617.5	615.8	613.1	610.5	607.0	604.5	602.7
17.5°	614.8	611.3	607.0	602.7	601.0	601.0	596.7	593.2	588.9	587.2	583.7
20°	598.4	594.0	590.7	585.4	582.8	580.2	577.7	572.4	568.9	566.4	562.1
22.5°	579.4	573.2	568.9	563.7	559.4	556.9	552.6	548.2	543.9	541.3	537.8
25°	555.1	549.9	542.9	537.8	535.1	531.8	526.5	522.1	517.8	513.5	511.8
27.5°	528.3	521.3	515.3	509.2	506.6	504.0	498.0	492.7	489.3	485.0	483.2
30°	498.8	491.9	485.0	479.7	477.2	472.9	469.4	463.3	458.9	455.6	451.2
32.5°	465.1	459.9	453.8	445.9	444.3	440.8	435.6	433.0	427.8	425.1	421.8
35°	428.6	425.1	419.1	413.1	410.5	408.8	404.5	399.2	395.8	393.2	391.5
37.5°	394.0	389.7	383.7	379.4	377.5	375.0	369.7	367.2	363.7	362.0	358.6
40°	356.8	352.4	348.1	345.6	342.9	341.2	337.8	335.1	331.6	329.1	328.3
42.5°	320.5	317.8	314.3	310.8	310.0	307.5	305.7	303.1	300.5	299.7	297.0
45°	287.5	284.9	281.5	278.0	277.1	275.4	274.5	271.9	270.2	270.2	270.2
47.5°	254.6	252.1	248.6	246.8	247.7	244.2	244.2	243.4	241.6	241.6	242.4
50°	225.1	221.6	220.8	219.1	217.3	215.6	216.5	214.0	214.0	215.6	214.8
52.5°	197.5	194.0	193.2	191.4	190.5	190.5	189.7	189.7	188.8	189.7	189.7
55°	172.4	169.7	168.0	166.2	165.4	165.4	165.4	164.6	163.7	165.4	166.2
57.5°	149.8	148.9	147.2	144.6	143.8	142.9	142.1	142.1	142.1	142.1	142.9
60°	129.9	128.1	126.5	123.8	123.8	123.0	122.1	121.3	121.3	121.3	121.3
62.5°	112.6	110.0	107.3	105.7	104.8	104.0	103.0	101.3	101.3	101.3	101.3
65°	95.3	92.7	90.9	89.2	87.5	87.5	85.7	84.9	83.2	82.2	80.5
67.5°	78.9	77.0	75.4	72.7	71.9	71.0	69.2	68.4	65.9	64.9	64.1
70°	64.1	61.5	59.7	58.1	57.2	55.4	53.7	51.9	50.2	48.4	46.8
72.5°	50.2	47.6	45.9	44.1	42.4	42.4	39.8	38.1	35.5	33.8	31.1
75°	37.3	34.6	32.9	30.3	29.4	28.6	26.0	24.3	21.6	19.1	17.3
77.5°	25.1	23.4	21.6	19.1	17.3	17.3	14.7	13.0	11.3	8.7	7.8
80°	15.6	13.8	12.1	10.3	10.3	8.7	7.8	6.0	4.3	3.5	2.6
82.5°	8.7	7.8	7.0	5.2	5.2	4.3	3.5	2.6	1.7	0.8	0.8
85°	4.3	3.5	2.6	2.6	1.7	1.7	1.7	0.8	0.8	0.0	0.0
87.5°	1.7	0.8	0.8	0.8	0.8	0.8	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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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6
2.5°	646.9	646.9	646.1	646.1	646.1	645.1	646.1	645.1	645.1	645.1	646.1
5°	643.4	641.7	641.7	640.8	640.8	639.9	640.8	639.9	639.1	638.3	639.1
7.5°	636.5	634.8	633.9	633.1	633.1	633.1	632.1	631.3	632.1	629.6	631.3
10°	627.0	626.1	624.4	623.5	622.6	623.5	622.6	621.0	621.0	621.0	620.1
12.5°	614.8	613.1	612.3	611.3	609.7	609.7	610.5	608.8	608.8	607.0	607.0
15°	600.2	598.4	596.7	596.7	595.0	595.0	594.0	594.0	593.2	592.3	592.3
17.5°	582.0	579.4	577.7	578.5	577.7	576.7	576.7	575.0	574.2	575.0	575.0
20°	560.3	558.6	556.9	557.7	555.9	555.1	555.9	553.4	554.2	554.2	554.2
22.5°	536.1	535.1	532.6	532.6	530.8	530.0	530.8	530.8	531.8	530.8	530.8
25°	509.2	507.5	505.8	505.8	504.8	504.0	504.8	505.8	504.8	505.8	505.8
27.5°	480.7	478.0	478.0	476.4	476.4	477.2	476.4	477.2	478.0	478.0	479.7
30°	449.4	448.6	447.7	446.9	446.9	447.7	447.7	447.7	448.6	450.3	450.3
32.5°	420.0	418.3	416.5	416.5	418.3	417.5	418.3	418.3	420.0	420.0	421.8
35°	388.0	388.0	386.2	387.0	387.0	387.0	387.0	388.8	390.5	391.5	393.2
37.5°	358.6	355.9	356.8	356.8	357.7	356.8	359.4	359.4	361.1	361.1	362.9
40°	326.5	326.5	327.3	326.5	327.3	327.3	329.1	330.8	331.6	333.4	334.3
42.5°	296.2	297.9	296.2	297.0	297.9	298.8	299.7	300.5	304.0	305.7	308.3
45°	268.4	269.4	270.2	271.1	270.2	271.9	272.7	274.5	277.1	278.0	278.9
47.5°	241.6	242.4	243.4	244.2	244.2	245.9	246.8	248.6	250.3	251.1	252.1
50°	215.6	217.3	218.3	218.3	219.1	220.8	222.6	222.6	224.3	226.9	227.8
52.5°	192.2	192.2	194.0	194.8	195.7	195.7	198.3	199.2	200.0	201.8	203.5
55°	166.2	168.9	169.7	169.7	171.5	173.2	174.0	174.9	174.9	178.4	178.4
57.5°	143.8	144.6	146.4	146.4	146.4	148.9	148.9	150.7	151.6	152.4	154.1
60°	121.3	123.0	123.0	123.8	123.0	124.6	125.6	127.3	128.1	129.0	129.9
62.5°	100.5	100.5	101.3	101.3	101.3	101.3	103.0	103.0	104.8	105.7	106.5
65°	80.5	80.5	80.5	80.5	80.5	80.5	80.5	80.5	81.4	81.4	83.2
67.5°	62.4	61.5	59.7	60.6	59.7	59.7	58.9	58.9	59.7	59.7	61.5
70°	45.1	44.1	42.4	42.4	41.6	40.7	39.8	38.9	38.1	38.1	38.1
72.5°	29.4	27.8	25.1	24.3	24.3	22.5	20.8	20.0	20.0	20.0	20.0
75°	14.7	13.0	11.3	10.3	10.3	8.7	9.5	8.7	8.7	8.7	8.7
77.5°	6.0	4.3	3.5	3.5	3.5	2.6	2.6	2.6	2.6	2.6	2.6
80°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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	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: P593528

CATALOG NUMBER: HC810D010-HM80520850-81RWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	648.6	648.6	648.6	648.6	648.6	648.6	648.6	648.6
2.5°	645.1	645.1	643.4	644.3	644.3	644.3	644.3	644.3
5°	637.4	638.3	637.4	638.3	638.3	637.4	637.4	637.4
7.5°	629.6	630.4	629.6	630.4	630.4	630.4	629.6	629.6
10°	620.1	620.1	620.1	620.1	620.1	619.2	620.1	620.1
12.5°	607.0	607.0	607.0	608.0	608.0	607.0	607.0	606.2
15°	593.2	591.5	592.3	593.2	592.3	592.3	592.3	592.3
17.5°	574.2	575.0	574.2	574.2	574.2	574.2	575.0	574.2
20°	554.2	554.2	555.1	554.2	554.2	554.2	554.2	553.4
22.5°	531.8	530.8	530.8	531.8	531.8	530.8	531.8	531.8
25°	506.6	507.5	506.6	506.6	507.5	507.5	507.5	506.6
27.5°	479.7	480.7	481.5	480.7	480.7	480.7	481.5	482.4
30°	452.1	453.8	452.1	452.1	453.8	452.9	453.8	453.8
32.5°	422.6	425.1	423.5	425.1	425.1	426.1	425.1	426.1
35°	393.2	395.8	395.8	395.8	396.7	397.5	397.5	396.7
37.5°	365.4	366.4	366.4	368.1	368.9	369.7	369.7	368.9
40°	336.9	338.6	339.4	339.4	339.4	341.2	342.9	341.2
42.5°	309.2	310.0	310.8	310.8	312.6	313.5	314.3	314.3
45°	282.3	284.0	284.9	285.8	286.7	288.4	287.5	289.2
47.5°	254.6	257.2	258.1	258.9	260.7	261.6	262.4	263.2
50°	229.5	231.3	231.3	232.9	235.6	235.6	237.3	238.1
52.5°	204.3	205.3	206.1	207.0	208.7	210.5	210.5	212.2
55°	180.2	181.0	181.0	181.9	182.7	186.2	187.0	187.0
57.5°	155.1	155.1	156.7	157.6	158.4	160.2	160.2	160.2
60°	130.8	131.6	131.6	132.5	133.4	135.1	135.9	135.1
62.5°	106.5	107.3	107.3	108.3	110.0	110.8	110.0	110.0
65°	84.0	84.9	84.9	85.7	87.5	87.5	86.5	87.5
67.5°	61.5	61.5	61.5	61.5	61.5	61.5	61.5	61.5
70°	38.9	38.1	37.3	38.1	38.1	38.1	37.3	38.9
72.5°	19.1	20.0	20.0	20.0	20.0	20.0	20.0	19.1
75°	8.7	8.7	7.8	7.8	7.8	8.7	8.7	7.8
77.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	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)