

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: P583966

Luminaire Tested: **HC815D010-HM80520940-81WWWB**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P583966  
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: HC815D010-HM80520940-81WWWB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1480.0 lumens  
Efficiency: N/A  
Efficacy: 105.7 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

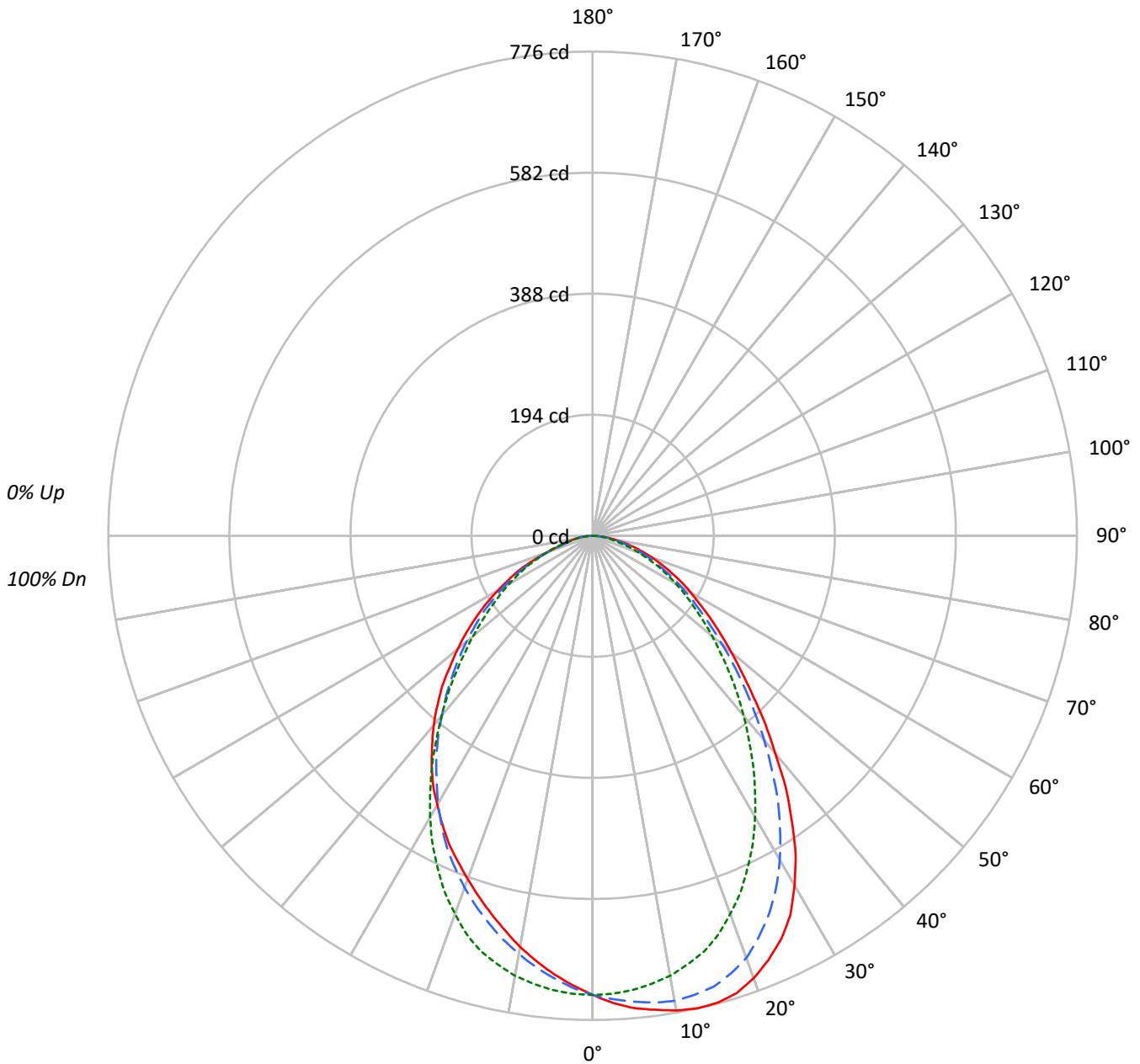
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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			100
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87			87
2	102	94	88	83	99	93	87	82	89	85	81	86	82	79	83	80	77	75			75
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65			65
4	87	76	68	62	84	75	67	61	72	66	61	70	64	60	68	63	59	57			57
5	80	69	60	54	78	67	60	54	65	59	54	64	58	53	62	57	52	50			50
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45			45
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40			40
8	65	52	45	39	64	52	44	39	51	44	39	49	43	39	48	43	38	37			37
9	61	48	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	33			33
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	30			30

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

	0°	90°	180°
0°	22692	22692	22692
5°	23525	22618	21838
10°	24189	22419	20948
15°	24728	22024	20023
20°	24766	21163	19210
25°	24293	19986	18533
30°	23041	18537	17714
35°	20934	16880	16921
40°	18307	15148	15949
45°	15865	13493	14862
50°	13893	11984	13538
55°	12360	10623	12252
60°	11157	9541	10768
65°	10069	8391	9383
70°	9052	7068	6978
75°	7971	5600	5230
80°	6677	4635	5008
85°	5166	4033	4423



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	69.4	4.7
10°-20°	195.5	13.2
20°-30°	279.4	18.9
30°-40°	296.9	20.1
40°-50°	255.6	17.3
50°-60°	191.1	12.9
60°-70°	121.9	8.2
70°-80°	55.5	3.7
80°-90°	14.5	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°	544.4	36.8
0°-40°	841.3	56.8
0°-60°	1288.1	87.0
0°-90°	1480.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1480.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	736	736	736	736	736	
5°	760	750	731	712	706	73
15°	775	748	690	643	627	218
25°	714	669	587	552	545	327
35°	556	517	448	437	450	346
45°	364	344	309	318	341	283
55°	230	211	198	214	228	207
65°	138	122	115	120	129	138
75°	67	58	47	43	44	71
85°	15	12	11	12	12	18
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°	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9
2.5°	749.5	747.3	748.4	747.3	748.4	748.4	746.4	746.4	746.4	746.4	743.2
5°	760.0	758.9	758.9	757.8	756.9	757.8	756.9	755.8	753.7	752.6	749.5
7.5°	766.3	766.3	766.3	766.3	765.2	764.1	763.1	761.0	758.9	756.9	754.7
10°	772.5	773.5	772.5	771.4	770.4	768.3	767.2	765.2	762.0	758.9	756.9
12.5°	775.7	775.7	774.6	774.6	772.5	771.4	768.3	765.2	762.0	758.9	753.7
15°	774.6	774.6	773.5	772.5	769.4	768.3	766.3	763.1	757.8	753.7	748.4
17.5°	768.3	767.2	765.2	765.2	761.0	760.0	757.8	753.7	748.4	742.2	735.9
20°	754.7	754.7	753.7	752.6	748.4	745.3	743.2	737.9	733.8	726.5	720.2
22.5°	735.9	737.9	735.9	733.8	728.5	727.6	724.4	718.2	711.9	703.5	696.1
25°	714.0	712.9	711.9	709.7	705.5	703.5	699.3	693.0	686.7	677.3	669.0
27.5°	685.8	681.5	681.5	677.3	674.2	671.1	669.0	662.8	654.3	647.1	636.6
30°	647.1	648.0	642.9	641.8	636.6	634.6	630.3	624.1	616.7	608.4	600.0
32.5°	605.3	602.1	602.1	597.9	593.7	590.6	589.6	582.3	576.0	567.6	559.2
35°	556.1	556.1	553.0	551.9	547.8	545.6	542.5	538.4	531.0	523.7	517.4
37.5°	508.0	506.0	504.9	502.8	499.7	496.6	496.6	489.2	488.1	479.8	471.4
40°	454.8	456.8	454.8	451.6	450.5	448.4	447.4	443.2	440.1	432.7	427.5
42.5°	409.8	407.7	407.7	406.6	402.5	402.5	400.3	398.3	393.1	390.9	384.6
45°	363.8	365.8	362.7	363.8	359.6	359.6	359.6	355.4	351.3	348.1	343.9
47.5°	324.0	325.1	325.1	322.0	320.9	320.9	318.8	316.7	313.5	309.4	306.3
50°	289.6	290.6	288.5	287.5	285.3	284.4	284.4	280.2	278.0	273.9	271.7
52.5°	258.2	258.2	257.1	257.1	254.0	254.0	252.0	248.8	246.7	244.6	239.4
55°	229.9	229.9	229.0	227.9	227.9	224.7	223.6	220.5	218.5	214.2	211.1
57.5°	202.8	203.9	202.8	201.7	200.8	199.7	197.6	194.5	192.3	189.2	187.1
60°	180.9	180.9	179.8	178.7	176.7	175.6	174.6	172.4	169.3	167.3	164.1
62.5°	159.9	158.9	157.9	156.8	154.7	154.7	152.7	150.5	147.4	145.3	143.2
65°	138.0	138.0	136.9	136.9	135.9	133.8	132.8	131.7	127.5	126.5	122.3
67.5°	118.1	119.2	117.1	117.1	115.0	115.0	114.0	110.9	109.8	107.7	105.6
70°	100.4	100.4	100.4	99.3	97.2	96.2	95.1	93.0	91.9	89.9	87.8
72.5°	82.5	82.5	81.6	81.6	80.5	79.4	78.4	76.3	76.3	74.2	72.2
75°	66.9	66.9	65.9	64.8	63.7	63.7	62.7	61.7	59.5	58.6	57.5
77.5°	51.2	51.2	51.2	50.1	49.2	49.2	49.2	47.0	44.9	44.9	43.9
80°	37.6	37.6	36.6	36.6	35.5	35.5	35.5	34.5	33.5	32.4	31.3
82.5°	25.1	25.1	25.1	25.1	24.1	24.1	24.1	23.0	21.9	21.9	21.9
85°	14.6	14.6	14.6	14.6	13.6	13.6	13.6	13.6	13.6	12.5	12.5
87.5°	6.3	5.2	6.3	5.2	6.3	5.2	6.3	5.2	5.2	5.2	5.2
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°	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9
2.5°	744.2	743.2	742.2	741.1	741.1	740.1	737.9	737.0	735.9	734.8	734.8
5°	748.4	747.3	745.3	743.2	742.2	740.1	737.9	735.9	733.8	730.7	729.6
7.5°	751.6	748.4	746.4	742.2	741.1	739.0	735.9	732.8	728.5	724.4	721.3
10°	751.6	747.3	744.2	739.0	737.0	734.8	730.7	725.4	720.2	716.0	710.8
12.5°	749.5	744.2	739.0	733.8	730.7	727.6	721.3	716.0	709.7	703.5	699.3
15°	742.2	735.9	729.6	723.4	720.2	716.0	709.7	702.4	696.1	689.9	682.6
17.5°	728.5	722.3	715.0	707.7	703.5	700.3	690.9	685.8	676.4	670.1	663.7
20°	710.8	703.5	694.1	686.7	681.5	678.4	671.1	661.7	654.3	644.9	638.7
22.5°	687.8	678.4	669.0	661.7	656.5	652.3	642.9	633.5	627.2	618.8	611.5
25°	660.6	651.2	641.8	631.4	626.1	622.0	613.6	605.3	596.8	587.4	581.2
27.5°	628.3	617.8	609.4	600.0	594.8	588.5	579.1	570.7	562.4	556.1	547.8
30°	592.7	581.2	572.9	563.5	558.2	553.0	543.6	535.1	527.9	520.6	516.3
32.5°	549.8	541.5	533.1	523.7	519.5	516.3	506.9	498.6	490.2	483.9	480.8
35°	509.1	499.7	492.4	483.9	478.7	475.6	467.3	459.9	455.7	448.4	444.3
37.5°	466.2	458.9	450.5	442.1	439.0	435.8	429.6	422.4	416.1	410.8	408.7
40°	421.3	415.0	407.7	402.5	399.3	396.2	390.9	385.7	381.5	376.3	374.3
42.5°	378.4	374.3	368.0	361.6	358.5	357.5	351.3	347.0	345.0	342.8	340.8
45°	339.7	333.4	329.3	325.1	322.0	319.8	316.7	313.5	311.5	309.4	307.3
47.5°	302.1	296.9	292.7	289.6	286.4	285.3	283.3	280.2	278.0	278.0	278.0
50°	267.6	263.4	259.2	257.1	256.1	254.0	252.0	250.9	249.8	249.8	249.8
52.5°	237.3	233.0	229.9	227.9	227.9	225.8	223.6	222.7	222.7	222.7	222.7
55°	209.1	205.9	203.9	201.7	199.7	198.6	198.6	198.6	197.6	197.6	198.6
57.5°	184.0	181.8	178.7	176.7	175.6	175.6	174.6	173.5	174.6	175.6	176.7
60°	161.0	158.9	157.9	154.7	154.7	154.7	153.6	153.6	153.6	154.7	155.8
62.5°	140.0	139.1	136.9	135.9	134.8	134.8	133.8	133.8	133.8	133.8	134.8
65°	121.2	119.2	117.1	117.1	117.1	116.0	116.0	114.0	115.0	115.0	114.0
67.5°	103.5	101.3	100.4	99.3	98.2	98.2	97.2	96.2	95.1	95.1	95.1
70°	86.8	84.7	84.7	82.5	82.5	81.6	80.5	80.5	79.4	78.4	77.4
72.5°	70.0	69.0	68.0	66.9	66.9	66.9	65.9	64.8	63.7	62.7	60.6
75°	55.4	55.4	53.3	52.3	52.3	51.2	50.1	49.2	48.1	47.0	46.0
77.5°	42.9	41.8	39.8	38.7	38.7	38.7	37.6	36.6	35.5	34.5	33.5
80°	31.3	30.4	29.3	28.2	28.2	28.2	27.2	27.2	26.1	26.1	26.1
82.5°	20.8	20.8	19.9	19.9	19.9	19.9	18.8	18.8	18.8	18.8	18.8
85°	12.5	12.5	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
87.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
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°	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9
2.5°	732.8	732.8	730.7	729.6	728.5	729.6	727.6	726.5	725.4	725.4	724.4
5°	726.5	725.4	721.3	720.2	719.1	718.2	716.0	714.0	711.9	710.8	709.7
7.5°	718.2	715.0	710.8	709.7	708.8	705.5	702.4	700.3	697.2	696.1	694.1
10°	706.6	702.4	699.3	696.1	694.1	690.9	687.8	684.7	680.5	679.5	676.4
12.5°	693.0	687.8	681.5	680.5	677.3	673.2	669.0	665.9	662.8	660.6	657.4
15°	676.4	671.1	664.8	661.7	658.5	655.4	650.2	646.0	642.9	639.7	636.6
17.5°	656.5	650.2	644.9	641.8	639.7	634.6	630.3	625.2	622.0	618.8	615.6
20°	632.4	627.2	619.9	616.7	615.6	611.5	606.2	604.2	600.0	596.8	594.8
22.5°	605.3	600.0	593.7	591.7	587.4	585.4	580.2	578.0	576.0	572.9	571.8
25°	574.9	569.7	564.4	563.5	560.3	558.2	555.0	551.9	551.9	548.8	548.8
27.5°	543.6	538.4	534.2	532.0	531.0	528.9	525.7	524.8	523.7	522.6	522.6
30°	510.1	503.8	501.8	500.7	499.7	497.5	496.6	494.4	495.5	496.6	495.5
32.5°	474.5	472.5	468.3	466.2	467.3	466.2	464.2	466.2	465.1	467.3	468.3
35°	440.1	438.0	435.8	435.8	433.8	433.8	433.8	434.9	436.9	438.0	440.1
37.5°	406.6	403.4	402.5	401.4	402.5	402.5	402.5	404.5	406.6	408.7	411.9
40°	371.1	369.0	369.0	369.0	369.0	372.1	371.1	373.2	375.2	378.4	381.5
42.5°	337.6	337.6	338.7	338.7	338.7	338.7	340.8	343.9	347.0	350.2	353.3
45°	306.3	306.3	306.3	308.4	308.4	309.4	313.5	315.7	317.8	320.9	324.0
47.5°	277.0	277.0	278.0	279.1	280.2	282.2	284.4	287.5	290.6	292.7	295.8
50°	249.8	250.9	252.9	255.1	255.1	256.1	259.2	261.4	263.4	266.5	267.6
52.5°	223.6	225.8	227.9	229.0	229.9	232.1	233.0	236.3	237.3	240.4	241.5
55°	199.7	200.8	203.9	204.8	204.8	207.0	209.1	211.1	214.2	214.2	216.4
57.5°	177.7	178.7	180.9	181.8	180.9	184.0	185.0	187.1	188.1	190.3	191.2
60°	155.8	157.9	158.9	158.9	159.9	161.0	163.0	163.0	165.2	167.3	167.3
62.5°	134.8	135.9	136.9	138.0	139.1	138.0	141.1	141.1	143.2	144.2	146.3
65°	115.0	116.0	116.0	117.1	117.1	118.1	118.1	119.2	120.3	122.3	123.4
67.5°	95.1	95.1	95.1	96.2	95.1	96.2	96.2	97.2	97.2	99.3	100.4
70°	77.4	76.3	75.3	75.3	75.3	75.3	74.2	75.3	75.3	76.3	76.3
72.5°	59.5	58.6	57.5	56.4	56.4	55.4	54.3	55.4	55.4	56.4	56.4
75°	44.9	42.9	42.9	42.9	41.8	41.8	41.8	42.9	42.9	42.9	43.9
77.5°	33.5	33.5	32.4	32.4	32.4	33.5	33.5	34.5	34.5	34.5	34.5
80°	25.1	26.1	26.1	26.1	26.1	27.2	27.2	27.2	27.2	28.2	28.2
82.5°	18.8	18.8	18.8	18.8	19.9	19.9	19.9	19.9	19.9	19.9	19.9
85°	11.4	12.5	12.5	11.4	12.5	12.5	12.5	12.5	12.5	12.5	12.5
87.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
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°	735.9	735.9	735.9	735.9	735.9	735.9	735.9	735.9
2.5°	723.4	723.4	723.4	723.4	722.3	722.3	722.3	721.3
5°	707.7	707.7	707.7	705.5	706.6	706.6	704.6	705.5
7.5°	692.0	690.9	689.9	689.9	688.9	687.8	686.7	687.8
10°	674.2	671.1	671.1	670.1	670.1	667.9	667.9	669.0
12.5°	654.3	652.3	652.3	651.2	650.2	649.1	648.0	648.0
15°	634.6	632.4	631.4	630.3	629.3	627.2	628.3	627.2
17.5°	614.7	611.5	611.5	610.5	609.4	607.3	607.3	606.2
20°	591.7	590.6	588.5	589.6	588.5	586.5	585.4	585.4
22.5°	568.6	568.6	567.6	567.6	566.6	565.5	564.4	564.4
25°	546.7	545.6	546.7	546.7	543.6	543.6	543.6	544.7
27.5°	521.6	522.6	521.6	521.6	521.6	521.6	522.6	521.6
30°	496.6	496.6	496.6	497.5	499.7	498.6	498.6	497.5
32.5°	469.3	470.4	470.4	471.4	472.5	474.5	474.5	475.6
35°	442.1	444.3	445.2	444.3	447.4	447.4	449.5	449.5
37.5°	413.9	415.0	417.1	418.1	420.2	421.3	422.4	422.4
40°	383.7	387.8	388.9	389.9	393.1	393.1	394.0	396.2
42.5°	355.4	359.6	360.7	361.6	363.8	366.9	365.8	368.0
45°	328.2	331.4	332.5	333.4	336.6	337.6	337.6	340.8
47.5°	299.0	301.0	302.1	304.1	306.3	308.4	310.4	309.4
50°	269.7	272.8	274.9	275.9	279.1	280.2	281.2	282.2
52.5°	243.5	245.7	246.7	247.7	250.9	252.0	252.9	255.1
55°	218.5	219.6	221.6	220.5	223.6	224.7	225.8	227.9
57.5°	193.4	194.5	195.5	195.5	197.6	199.7	200.8	201.7
60°	169.3	171.5	172.4	172.4	172.4	174.6	174.6	174.6
62.5°	147.4	147.4	148.5	148.5	150.5	150.5	150.5	150.5
65°	124.4	125.4	126.5	126.5	128.6	127.5	129.7	128.6
67.5°	100.4	100.4	102.4	102.4	101.3	102.4	102.4	102.4
70°	76.3	76.3	77.4	77.4	77.4	77.4	77.4	77.4
72.5°	56.4	56.4	56.4	57.5	56.4	56.4	57.5	56.4
75°	43.9	43.9	43.9	43.9	43.9	43.9	43.9	43.9
77.5°	34.5	34.5	35.5	35.5	35.5	35.5	35.5	35.5
80°	28.2	28.2	28.2	28.2	29.3	28.2	28.2	28.2
82.5°	20.8	19.9	20.8	19.9	20.8	20.8	20.8	20.8
85°	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
87.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
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)