

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: P584047

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

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584047
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: HC820D010-HM80520927-81WWWB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1673.6 lumens
Efficiency: N/A
Efficacy: 83.7 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

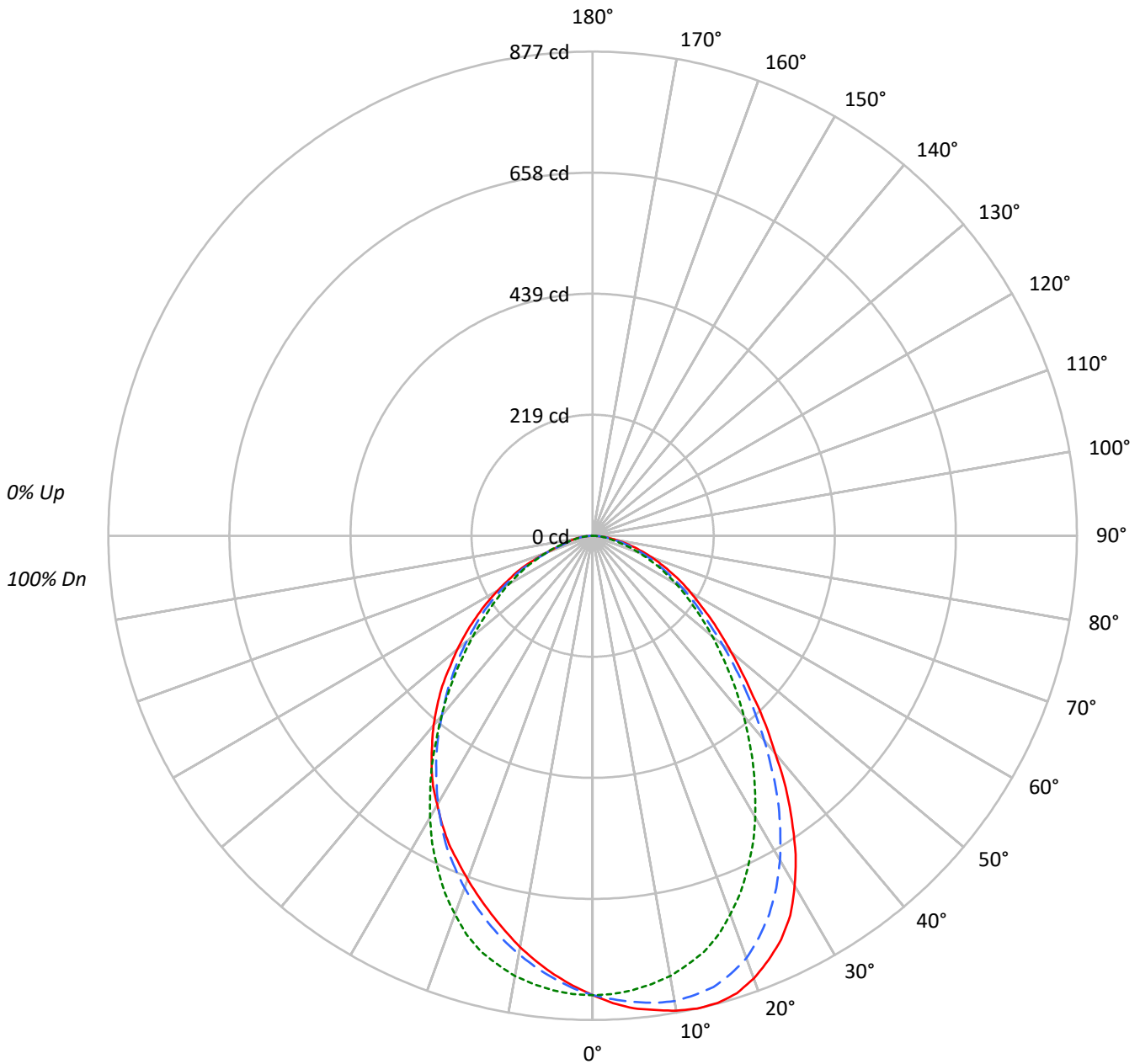
Input Watts (W): 20
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	25659	25659	25659
5°	26599	25574	24695
10°	27351	25353	23688
15°	27962	24904	22641
20°	28005	23932	21720
25°	27468	22602	20952
30°	26053	20958	20032
35°	23671	19089	19135
40°	20699	17128	18034
45°	17936	15259	16803
50°	15706	13552	15308
55°	13978	12010	13854
60°	12612	10787	12174
65°	11383	9485	10609
70°	10233	7988	7889
75°	9007	6338	5909
80°	7565	5256	5665
85°	5838	4599	5024



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.5	4.7
10°-20°	221.1	13.2
20°-30°	316.0	18.9
30°-40°	335.8	20.1
40°-50°	289.1	17.3
50°-60°	216.1	12.9
60°-70°	137.9	8.2
70°-80°	62.7	3.7
80°-90°	16.5	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°	615.6	36.8
0°-40°	951.4	56.8
0°-60°	1456.6	87.0
0°-90°	1673.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1673.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	832	832	832	832	832	
5°	859	848	826	805	798	82
15°	876	846	780	727	709	247
25°	807	756	664	624	616	370
35°	629	585	507	494	508	392
45°	411	389	350	359	385	320
55°	260	239	223	242	258	234
65°	156	138	130	136	145	156
75°	76	65	53	48	50	80
85°	16	14	13	14	14	20
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°	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1
2.5°	847.5	845.1	846.3	845.1	846.3	846.3	843.9	843.9	843.9	843.9	840.4
5°	859.3	858.1	858.1	857.0	855.8	857.0	855.8	854.6	852.2	851.0	847.5
7.5°	866.4	866.4	866.4	866.4	865.2	864.0	862.9	860.5	858.1	855.8	853.4
10°	873.5	874.7	873.5	872.3	871.1	868.8	867.6	865.2	861.7	858.1	855.8
12.5°	877.0	877.0	875.9	875.9	873.5	872.3	868.8	865.2	861.7	858.1	852.2
15°	875.9	875.9	874.7	873.5	870.0	868.8	866.4	862.9	857.0	852.2	846.3
17.5°	868.8	867.6	865.2	865.2	860.5	859.3	857.0	852.2	846.3	839.2	832.1
20°	853.4	853.4	852.2	851.0	846.3	842.8	840.4	834.5	829.8	821.5	814.4
22.5°	832.1	834.5	832.1	829.8	823.9	822.7	819.1	812.0	804.9	795.5	787.2
25°	807.3	806.1	804.9	802.6	797.8	795.5	790.8	783.7	776.6	765.9	756.5
27.5°	775.4	770.7	770.7	765.9	762.4	758.8	756.5	749.4	739.9	731.7	719.8
30°	731.7	732.8	726.9	725.7	719.8	717.5	712.7	705.7	697.4	687.9	678.5
32.5°	684.4	680.8	680.8	676.1	671.4	667.8	666.6	658.4	651.3	641.8	632.4
35°	628.8	628.8	625.3	624.1	619.4	617.0	613.5	608.7	600.5	592.2	585.1
37.5°	574.5	572.1	570.9	568.5	565.0	561.4	561.4	553.2	552.0	542.5	533.1
40°	514.2	516.5	514.2	510.6	509.4	507.1	505.9	501.2	497.6	489.3	483.4
42.5°	463.3	461.0	461.0	459.8	455.1	455.1	452.7	450.3	444.4	442.1	435.0
45°	411.3	413.7	410.2	411.3	406.6	406.6	406.6	401.9	397.2	393.6	388.9
47.5°	366.4	367.6	367.6	364.1	362.9	362.9	360.5	358.1	354.6	349.9	346.3
50°	327.4	328.6	326.2	325.0	322.7	321.5	321.5	316.8	314.4	309.7	307.3
52.5°	292.0	292.0	290.8	290.8	287.2	287.2	284.9	281.3	279.0	276.6	270.7
55°	260.0	260.0	258.9	257.7	257.7	254.1	252.9	249.4	247.0	242.3	238.8
57.5°	229.3	230.5	229.3	228.1	226.9	225.8	223.4	219.9	217.5	213.9	211.6
60°	204.5	204.5	203.3	202.1	199.8	198.6	197.4	195.0	191.5	189.1	185.6
62.5°	180.8	179.7	178.5	177.3	174.9	174.9	172.6	170.2	166.7	164.3	161.9
65°	156.0	156.0	154.8	154.8	153.7	151.3	150.1	148.9	144.2	143.0	138.3
67.5°	133.6	134.7	132.4	132.4	130.0	130.0	128.8	125.3	124.1	121.7	119.4
70°	113.5	113.5	113.5	112.3	109.9	108.7	107.6	105.2	104.0	101.7	99.3
72.5°	93.4	93.4	92.2	92.2	91.0	89.8	88.6	86.3	86.3	83.9	81.6
75°	75.6	75.6	74.5	73.3	72.1	72.1	70.9	69.7	67.4	66.2	65.0
77.5°	57.9	57.9	57.9	56.7	55.6	55.6	55.6	53.2	50.8	50.8	49.6
80°	42.6	42.6	41.4	41.4	40.2	40.2	40.2	39.0	37.8	36.6	35.5
82.5°	28.4	28.4	28.4	28.4	27.2	27.2	27.2	26.0	24.8	24.8	24.8
85°	16.5	16.5	16.5	16.5	15.4	15.4	15.4	15.4	15.4	14.2	14.2
87.5°	7.1	5.9	7.1	5.9	7.1	5.9	7.1	5.9	5.9	5.9	5.9
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°	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1
2.5°	841.6	840.4	839.2	838.0	838.0	836.9	834.5	833.3	832.1	830.9	830.9
5°	846.3	845.1	842.8	840.4	839.2	836.9	834.5	832.1	829.8	826.2	825.0
7.5°	849.9	846.3	843.9	839.2	838.0	835.7	832.1	828.6	823.9	819.1	815.6
10°	849.9	845.1	841.6	835.7	833.3	830.9	826.2	820.3	814.4	809.7	803.8
12.5°	847.5	841.6	835.7	829.8	826.2	822.7	815.6	809.7	802.6	795.5	790.8
15°	839.2	832.1	825.0	817.9	814.4	809.7	802.6	794.3	787.2	780.1	771.8
17.5°	823.9	816.8	808.5	800.2	795.5	791.9	781.3	775.4	764.8	757.7	750.6
20°	803.8	795.5	784.8	776.6	770.7	767.1	758.8	748.2	739.9	729.3	722.2
22.5°	777.8	767.1	756.5	748.2	742.3	737.6	726.9	716.3	709.2	699.7	691.5
25°	747.0	736.4	725.7	713.9	708.0	703.3	693.8	684.4	674.9	664.3	657.2
27.5°	710.4	698.6	689.1	678.5	672.6	665.5	654.8	645.4	635.9	628.8	619.4
30°	670.2	657.2	647.7	637.1	631.2	625.3	614.6	605.2	596.9	588.6	583.9
32.5°	621.7	612.3	602.8	592.2	587.5	583.9	573.3	563.8	554.4	547.3	543.7
35°	575.6	565.0	556.7	547.3	541.4	537.8	528.4	520.1	515.4	507.1	502.4
37.5°	527.2	518.9	509.4	500.0	496.4	492.9	485.8	477.5	470.4	464.5	462.2
40°	476.3	469.3	461.0	455.1	451.5	448.0	442.1	436.2	431.4	425.5	423.2
42.5°	427.9	423.2	416.1	409.0	405.4	404.2	397.2	392.4	390.1	387.7	385.3
45°	384.2	377.1	372.3	367.6	364.1	361.7	358.1	354.6	352.2	349.9	347.5
47.5°	341.6	335.7	331.0	327.4	323.9	322.7	320.3	316.8	314.4	314.4	314.4
50°	302.6	297.9	293.1	290.8	289.6	287.2	284.9	283.7	282.5	282.5	282.5
52.5°	268.3	263.6	260.0	257.7	257.7	255.3	252.9	251.8	251.8	251.8	251.8
55°	236.4	232.9	230.5	228.1	225.8	224.6	224.6	224.6	223.4	223.4	224.6
57.5°	208.0	205.7	202.1	199.8	198.6	198.6	197.4	196.2	197.4	198.6	199.8
60°	182.0	179.7	178.5	174.9	174.9	174.9	173.8	173.8	173.8	174.9	176.1
62.5°	158.4	157.2	154.8	153.7	152.5	152.5	151.3	151.3	151.3	151.3	152.5
65°	137.1	134.7	132.4	132.4	132.4	131.2	131.2	128.8	130.0	130.0	128.8
67.5°	117.0	114.7	113.5	112.3	111.1	111.1	109.9	108.7	107.6	107.6	107.6
70°	98.1	95.7	95.7	93.4	93.4	92.2	91.0	91.0	89.8	88.6	87.5
72.5°	79.2	78.0	76.8	75.6	75.6	75.6	74.5	73.3	72.1	70.9	68.6
75°	62.6	62.6	60.3	59.1	59.1	57.9	56.7	55.6	54.4	53.2	52.0
77.5°	48.5	47.3	44.9	43.7	43.7	43.7	42.6	41.4	40.2	39.0	37.8
80°	35.5	34.3	33.1	31.9	31.9	31.9	30.7	30.7	29.6	29.6	29.6
82.5°	23.6	23.6	22.5	22.5	22.5	22.5	21.3	21.3	21.3	21.3	21.3
85°	14.2	14.2	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
87.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
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°	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1
2.5°	828.6	828.6	826.2	825.0	823.9	825.0	822.7	821.5	820.3	820.3	819.1
5°	821.5	820.3	815.6	814.4	813.2	812.0	809.7	807.3	804.9	803.8	802.6
7.5°	812.0	808.5	803.8	802.6	801.4	797.8	794.3	791.9	788.4	787.2	784.8
10°	799.0	794.3	790.8	787.2	784.8	781.3	777.8	774.2	769.5	768.3	764.8
12.5°	783.7	777.8	770.7	769.5	765.9	761.2	756.5	752.9	749.4	747.0	743.5
15°	764.8	758.8	751.8	748.2	744.7	741.1	735.2	730.5	726.9	723.4	719.8
17.5°	742.3	735.2	729.3	725.7	723.4	717.5	712.7	706.8	703.3	699.7	696.2
20°	715.1	709.2	700.9	697.4	696.2	691.5	685.6	683.2	678.5	674.9	672.6
22.5°	684.4	678.5	671.4	669.0	664.3	661.9	656.0	653.6	651.3	647.7	646.6
25°	650.1	644.2	638.3	637.1	633.6	631.2	627.6	624.1	624.1	620.6	620.6
27.5°	614.6	608.7	604.0	601.6	600.5	598.1	594.5	593.4	592.2	591.0	591.0
30°	576.8	569.7	567.4	566.2	565.0	562.6	561.4	559.1	560.3	561.4	560.3
32.5°	536.6	534.3	529.5	527.2	528.4	527.2	524.8	527.2	526.0	528.4	529.5
35°	497.6	495.3	492.9	492.9	490.5	490.5	490.5	491.7	494.1	495.3	497.6
37.5°	459.8	456.3	455.1	453.9	455.1	455.1	455.1	457.4	459.8	462.2	465.7
40°	419.6	417.2	417.2	417.2	417.2	420.8	419.6	422.0	424.3	427.9	431.4
42.5°	381.8	381.8	383.0	383.0	383.0	383.0	385.3	388.9	392.4	396.0	399.5
45°	346.3	346.3	346.3	348.7	348.7	349.9	354.6	357.0	359.3	362.9	366.4
47.5°	313.2	313.2	314.4	315.6	316.8	319.1	321.5	325.0	328.6	331.0	334.5
50°	282.5	283.7	286.0	288.4	288.4	289.6	293.1	295.5	297.9	301.4	302.6
52.5°	252.9	255.3	257.7	258.9	260.0	262.4	263.6	267.1	268.3	271.9	273.0
55°	225.8	226.9	230.5	231.7	231.7	234.0	236.4	238.8	242.3	242.3	244.7
57.5°	200.9	202.1	204.5	205.7	204.5	208.0	209.2	211.6	212.8	215.1	216.3
60°	176.1	178.5	179.7	179.7	180.8	182.0	184.4	184.4	186.8	189.1	189.1
62.5°	152.5	153.7	154.8	156.0	157.2	156.0	159.6	159.6	161.9	163.1	165.5
65°	130.0	131.2	131.2	132.4	132.4	133.6	133.6	134.7	135.9	138.3	139.5
67.5°	107.6	107.6	107.6	108.7	107.6	108.7	108.7	109.9	109.9	112.3	113.5
70°	87.5	86.3	85.1	85.1	85.1	85.1	83.9	85.1	85.1	86.3	86.3
72.5°	67.4	66.2	65.0	63.8	63.8	62.6	61.5	62.6	62.6	63.8	63.8
75°	50.8	48.5	48.5	48.5	47.3	47.3	47.3	48.5	48.5	48.5	49.6
77.5°	37.8	37.8	36.6	36.6	36.6	37.8	37.8	39.0	39.0	39.0	39.0
80°	28.4	29.6	29.6	29.6	29.6	30.7	30.7	30.7	30.7	31.9	31.9
82.5°	21.3	21.3	21.3	21.3	22.5	22.5	22.5	22.5	22.5	22.5	22.5
85°	13.0	14.2	14.2	13.0	14.2	14.2	14.2	14.2	14.2	14.2	14.2
87.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
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: P584047

CATALOG NUMBER: HC820D010-HM80520927-81WWWB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	832.1	832.1	832.1	832.1	832.1	832.1	832.1	832.1
2.5°	817.9	817.9	817.9	817.9	816.8	816.8	816.8	815.6
5°	800.2	800.2	800.2	797.8	799.0	799.0	796.7	797.8
7.5°	782.5	781.3	780.1	780.1	778.9	777.8	776.6	777.8
10°	762.4	758.8	758.8	757.7	757.7	755.3	755.3	756.5
12.5°	739.9	737.6	737.6	736.4	735.2	734.0	732.8	732.8
15°	717.5	715.1	713.9	712.7	711.6	709.2	710.4	709.2
17.5°	695.0	691.5	691.5	690.3	689.1	686.7	686.7	685.6
20°	669.0	667.8	665.5	666.6	665.5	663.1	661.9	661.9
22.5°	643.0	643.0	641.8	641.8	640.6	639.5	638.3	638.3
25°	618.2	617.0	618.2	618.2	614.6	614.6	614.6	615.8
27.5°	589.8	591.0	589.8	589.8	589.8	589.8	591.0	589.8
30°	561.4	561.4	561.4	562.6	565.0	563.8	563.8	562.6
32.5°	530.7	531.9	531.9	533.1	534.3	536.6	536.6	537.8
35°	500.0	502.4	503.5	502.4	505.9	505.9	508.3	508.3
37.5°	468.1	469.3	471.6	472.8	475.2	476.3	477.5	477.5
40°	433.8	438.5	439.7	440.9	444.4	444.4	445.6	448.0
42.5°	401.9	406.6	407.8	409.0	411.3	414.9	413.7	416.1
45°	371.1	374.7	375.9	377.1	380.6	381.8	381.8	385.3
47.5°	338.1	340.4	341.6	344.0	346.3	348.7	351.1	349.9
50°	305.0	308.5	310.9	312.0	315.6	316.8	318.0	319.1
52.5°	275.4	277.8	279.0	280.1	283.7	284.9	286.0	288.4
55°	247.0	248.2	250.6	249.4	252.9	254.1	255.3	257.7
57.5°	218.7	219.9	221.0	221.0	223.4	225.8	226.9	228.1
60°	191.5	193.8	195.0	195.0	195.0	197.4	197.4	197.4
62.5°	166.7	166.7	167.8	167.8	170.2	170.2	170.2	170.2
65°	140.7	141.8	143.0	143.0	145.4	144.2	146.6	145.4
67.5°	113.5	113.5	115.8	115.8	114.7	115.8	115.8	115.8
70°	86.3	86.3	87.5	87.5	87.5	87.5	87.5	87.5
72.5°	63.8	63.8	63.8	65.0	63.8	63.8	65.0	63.8
75°	49.6	49.6	49.6	49.6	49.6	49.6	49.6	49.6
77.5°	39.0	39.0	40.2	40.2	40.2	40.2	40.2	40.2
80°	31.9	31.9	31.9	31.9	33.1	31.9	31.9	31.9
82.5°	23.6	22.5	23.6	22.5	23.6	23.6	23.6	23.6
85°	14.2	14.2	14.2	14.2	14.2	14.2	14.2	14.2
87.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
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)