

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: P584046

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

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584046
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: HC820D010-HM80520927-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1607.6 lumens
Efficiency: N/A
Efficacy: 80.4 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

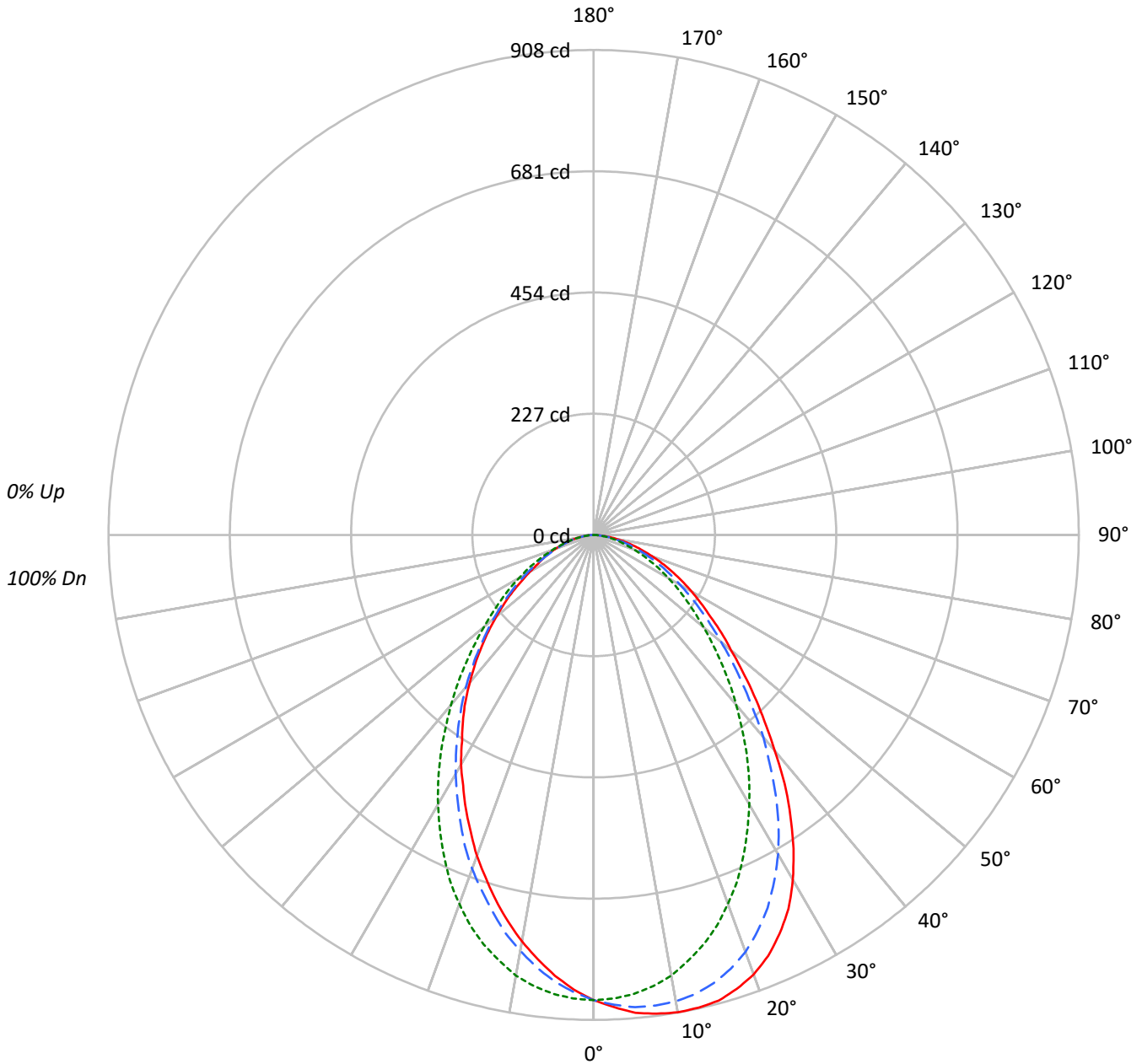
Input Watts (W): 20
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	100	100	100
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87	87	87	87
2	102	95	89	84	99	93	88	83	90	85	81	86	83	79	83	80	78	76	76	76	76
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66	66	66	66
4	87	76	69	63	85	75	68	62	73	67	62	71	65	61	68	64	60	58	58	58	58
5	81	69	61	55	79	68	61	55	66	60	54	64	59	54	63	57	53	51	51	51	51
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46	46	46	46
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41	41	41	41
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38	38	38	38
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34	34	34	34
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32	32	32	32

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	26858	26858	26858
5°	27803	26704	25645
10°	28422	26236	24201
15°	28824	25354	22599
20°	28736	24123	20979
25°	28026	22558	19261
30°	26552	20744	17672
35°	24156	18773	16063
40°	21218	16701	14512
45°	18503	14692	12939
50°	16104	12871	11398
55°	14360	11311	9914
60°	13050	9917	8455
65°	11733	8624	7676
70°	10440	7357	6924
75°	9150	6195	5909
80°	7760	5043	5256
85°	5838	3750	4175



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.6	5.1
10°-20°	224.8	14.0
20°-30°	312.0	19.4
30°-40°	322.6	20.1
40°-50°	270.2	16.8
50°-60°	196.1	12.2
60°-70°	123.8	7.7
70°-80°	61.3	3.8
80°-90°	15.2	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°	618.4	38.5
0°-40°	941.0	58.5
0°-60°	1407.3	87.5
0°-90°	1607.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1607.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	871	871	871	871	871	
5°	898	888	863	839	828	86
15°	903	869	794	730	708	254
25°	824	770	663	591	566	377
35°	642	594	499	442	427	400
45°	424	394	337	304	297	328
55°	267	244	210	193	184	241
65°	161	141	118	104	105	160
75°	77	64	52	50	50	82
85°	16	13	11	12	12	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°	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0
2.5°	885.2	885.2	886.4	885.2	885.2	885.2	884.0	884.0	882.8	882.8	880.5
5°	898.2	895.8	898.2	895.8	895.8	895.8	894.7	892.3	891.1	888.7	887.6
7.5°	904.1	902.9	902.9	901.7	901.7	900.6	899.4	898.2	893.5	892.3	888.7
10°	907.7	906.5	906.5	905.3	902.9	902.9	900.6	899.4	893.5	891.1	886.4
12.5°	906.5	906.5	906.5	905.3	901.7	900.6	898.2	894.7	889.9	885.2	880.5
15°	902.9	902.9	900.6	899.4	895.8	893.5	892.3	886.4	881.7	875.7	868.7
17.5°	891.1	891.1	889.9	887.6	884.0	881.7	879.3	873.4	868.7	859.2	852.1
20°	875.7	874.6	873.4	869.8	866.3	865.1	861.6	853.3	847.4	840.3	830.8
22.5°	853.3	852.1	850.9	848.6	842.6	840.3	837.9	832.0	821.4	814.3	802.5
25°	823.7	823.7	821.4	817.8	811.9	809.6	806.0	800.1	790.6	780.0	770.5
27.5°	789.5	788.3	784.7	782.4	777.6	774.1	768.2	761.1	751.6	743.4	731.5
30°	745.7	745.7	743.4	739.8	733.9	731.5	726.8	718.5	709.1	698.4	690.2
32.5°	696.1	696.1	692.5	690.2	686.6	680.7	679.5	670.1	661.8	653.5	644.1
35°	641.7	642.9	640.5	635.8	629.9	629.9	627.5	619.2	609.8	601.5	594.4
37.5°	587.3	583.8	582.6	580.2	576.7	572.0	569.6	566.1	557.8	551.9	541.2
40°	527.1	528.2	525.9	523.5	522.3	518.8	517.6	511.7	505.8	498.7	494.0
42.5°	472.8	472.8	472.8	470.4	468.1	464.5	463.3	459.8	452.7	448.0	440.9
45°	424.3	420.8	420.8	419.6	418.4	416.1	412.5	410.2	405.4	401.9	393.6
47.5°	377.1	378.2	377.1	375.9	372.3	371.1	370.0	365.2	360.5	357.0	351.1
50°	335.7	338.1	335.7	335.7	333.3	332.1	329.8	326.2	322.7	316.8	310.9
52.5°	301.4	301.4	300.2	299.0	295.5	293.1	292.0	290.8	284.9	280.1	275.4
55°	267.1	268.3	268.3	264.8	263.6	261.2	260.0	256.5	254.1	247.0	243.5
57.5°	237.6	236.4	237.6	235.2	232.9	230.5	229.3	226.9	223.4	218.7	213.9
60°	211.6	209.2	209.2	208.0	205.7	204.5	202.1	198.6	195.0	190.3	186.8
62.5°	185.6	184.4	183.2	182.0	179.7	178.5	177.3	173.8	170.2	166.7	163.1
65°	160.8	160.8	159.6	157.2	156.0	154.8	153.7	151.3	146.6	144.2	140.7
67.5°	138.3	137.1	137.1	134.7	132.4	131.2	131.2	128.8	125.3	121.7	119.4
70°	115.8	117.0	115.8	114.7	112.3	112.3	109.9	108.7	104.0	102.8	99.3
72.5°	95.7	95.7	94.6	94.6	92.2	91.0	91.0	88.6	86.3	83.9	81.6
75°	76.8	76.8	76.8	75.6	74.5	72.1	72.1	70.9	68.6	66.2	63.8
77.5°	60.3	59.1	59.1	57.9	56.7	55.6	55.6	54.4	52.0	50.8	48.5
80°	43.7	42.6	42.6	42.6	40.2	41.4	40.2	39.0	37.8	36.6	35.5
82.5°	28.4	29.6	29.6	28.4	27.2	27.2	27.2	26.0	26.0	24.8	23.6
85°	16.5	16.5	16.5	16.5	15.4	15.4	15.4	14.2	14.2	14.2	13.0
87.5°	7.1	7.1	7.1	7.1	7.1	7.1	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0
2.5°	880.5	878.1	876.9	875.7	875.7	874.6	873.4	871.0	871.0	868.7	867.5
5°	885.2	881.7	879.3	876.9	875.7	873.4	871.0	867.5	866.3	862.7	859.2
7.5°	886.4	880.5	878.1	873.4	871.0	868.7	863.9	860.4	855.6	852.1	847.4
10°	881.7	876.9	871.0	865.1	863.9	860.4	853.3	848.6	842.6	837.9	830.8
12.5°	874.6	867.5	861.6	854.5	850.9	847.4	840.3	833.2	824.9	816.6	809.6
15°	862.7	854.5	846.2	837.9	833.2	829.6	821.4	813.1	804.8	794.2	787.1
17.5°	845.0	835.6	827.3	816.6	811.9	808.4	797.7	788.3	777.6	767.0	759.9
20°	822.6	810.7	801.3	789.5	785.9	780.0	769.4	758.7	746.9	735.1	726.8
22.5°	793.0	781.2	770.5	758.7	752.8	746.9	736.3	723.3	711.4	702.0	693.7
25°	758.7	748.1	735.1	724.4	717.4	710.3	698.4	687.8	677.2	663.0	654.7
27.5°	720.9	707.9	698.4	684.3	677.2	672.4	659.4	645.3	635.8	622.8	613.3
30°	678.3	666.5	655.9	641.7	634.6	629.9	618.1	605.1	595.6	582.6	573.2
32.5°	633.4	620.4	607.4	598.0	589.7	585.0	572.0	563.7	551.9	541.2	530.6
35°	585.0	572.0	562.5	549.5	544.8	540.1	529.4	518.8	508.1	498.7	490.5
37.5°	533.0	523.5	512.9	503.4	499.9	495.1	482.3	472.8	464.5	455.1	448.0
40°	482.3	474.0	466.9	457.4	451.5	448.0	438.5	430.2	420.8	414.9	407.8
42.5°	436.2	426.7	419.6	412.5	406.6	403.1	394.8	388.9	381.8	375.9	367.6
45°	387.7	383.0	374.7	368.8	365.2	360.5	354.6	347.5	341.6	336.9	331.0
47.5°	345.1	340.4	334.5	327.4	325.0	321.5	315.6	310.9	306.1	301.4	295.5
50°	306.1	300.2	295.5	290.8	288.4	284.9	279.0	276.6	273.0	268.3	264.8
52.5°	270.7	266.0	261.2	255.3	254.1	251.8	248.2	243.5	239.9	237.6	235.2
55°	238.8	234.0	230.5	225.8	224.6	222.2	217.5	215.1	212.8	210.4	208.0
57.5°	210.4	205.7	200.9	198.6	196.2	193.8	192.7	189.1	186.8	185.6	183.2
60°	184.4	179.7	176.1	172.6	171.4	170.2	167.8	165.5	163.1	160.8	159.6
62.5°	159.6	154.8	152.5	150.1	147.8	147.8	145.4	143.0	140.7	139.5	137.1
65°	137.1	134.7	131.2	127.7	126.5	126.5	122.9	121.7	120.6	118.2	115.8
67.5°	115.8	113.5	109.9	108.7	107.6	106.4	105.2	102.8	100.5	99.3	96.9
70°	96.9	94.6	92.2	91.0	89.8	88.6	86.3	85.1	82.7	81.6	80.4
72.5°	78.0	76.8	74.5	73.3	72.1	70.9	69.7	68.6	66.2	65.0	63.8
75°	62.6	61.5	59.1	57.9	56.7	56.7	55.6	53.2	52.0	52.0	50.8
77.5°	47.3	46.1	44.9	43.7	42.6	42.6	41.4	40.2	39.0	39.0	37.8
80°	34.3	33.1	31.9	31.9	31.9	30.7	29.6	29.6	28.4	28.4	27.2
82.5°	22.5	22.5	21.3	21.3	21.3	20.1	20.1	18.9	18.9	18.9	18.9
85°	13.0	13.0	13.0	11.8	11.8	11.8	11.8	11.8	11.8	10.6	11.8
87.5°	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	4.7	4.7	4.7
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0
2.5°	866.3	865.1	862.7	862.7	860.4	860.4	859.2	858.0	856.8	855.6	854.5
5°	858.0	853.3	850.9	849.7	847.4	846.2	842.6	840.3	839.1	836.7	834.4
7.5°	842.6	837.9	833.2	832.0	830.8	826.1	822.6	819.0	816.6	814.3	811.9
10°	824.9	820.2	814.3	811.9	809.6	803.6	798.9	795.4	790.6	785.9	784.7
12.5°	803.6	796.5	789.5	787.1	783.5	777.6	772.9	767.0	763.5	757.5	756.4
15°	778.8	770.5	764.6	758.7	756.4	750.5	742.2	737.4	730.4	728.0	722.1
17.5°	749.3	741.0	732.7	730.4	726.8	718.5	710.3	704.4	697.3	693.7	690.2
20°	718.5	707.9	699.6	697.3	692.5	685.4	677.2	671.3	665.3	658.3	654.7
22.5°	683.1	671.3	664.2	658.3	657.1	648.8	639.3	634.6	629.9	624.0	619.2
25°	644.1	633.4	625.2	620.4	618.1	611.0	603.9	598.0	590.9	587.3	581.4
27.5°	603.9	596.8	586.2	581.4	577.9	572.0	563.7	560.1	553.1	548.3	544.8
30°	564.9	554.2	548.3	542.4	538.9	533.0	525.9	522.3	516.4	511.7	508.1
32.5°	522.3	515.2	507.0	504.6	499.9	494.0	489.3	483.4	478.7	474.0	472.8
35°	483.4	474.0	465.7	463.3	459.8	453.9	451.5	448.0	442.1	440.9	436.2
37.5°	440.9	436.2	426.7	423.2	422.0	417.2	412.5	410.2	406.6	403.1	401.9
40°	400.7	394.8	390.1	386.5	384.2	380.6	375.9	374.7	372.3	367.6	366.4
42.5°	362.9	357.0	352.2	351.1	347.5	344.0	341.6	338.1	336.9	335.7	333.3
45°	326.2	322.7	318.0	316.8	315.6	310.9	308.5	306.1	303.8	302.6	300.2
47.5°	293.1	289.6	286.0	284.9	282.5	281.3	277.8	276.6	273.0	271.9	270.7
50°	261.2	258.9	256.5	255.3	252.9	251.8	249.4	247.0	244.7	243.5	242.3
52.5°	232.9	230.5	228.1	226.9	225.8	223.4	221.0	218.7	217.5	216.3	215.1
55°	205.7	203.3	202.1	200.9	199.8	198.6	195.0	193.8	192.7	191.5	189.1
57.5°	180.8	178.5	176.1	176.1	174.9	173.8	171.4	169.0	169.0	166.7	164.3
60°	158.4	156.0	153.7	152.5	151.3	148.9	147.8	146.6	145.4	144.2	141.8
62.5°	134.7	133.6	131.2	131.2	128.8	127.7	126.5	125.3	124.1	121.7	120.6
65°	114.7	113.5	111.1	109.9	109.9	108.7	106.4	105.2	104.0	104.0	102.8
67.5°	95.7	94.6	92.2	91.0	91.0	89.8	88.6	88.6	87.5	86.3	87.5
70°	79.2	76.8	76.8	75.6	75.6	74.5	73.3	73.3	73.3	74.5	74.5
72.5°	62.6	61.5	60.3	60.3	60.3	60.3	59.1	59.1	60.3	61.5	61.5
75°	49.6	48.5	48.5	48.5	47.3	47.3	48.5	48.5	49.6	49.6	49.6
77.5°	36.6	36.6	36.6	36.6	36.6	36.6	37.8	37.8	39.0	39.0	39.0
80°	27.2	27.2	27.2	27.2	27.2	28.4	28.4	28.4	28.4	28.4	29.6
82.5°	18.9	18.9	18.9	18.9	18.9	18.9	18.9	20.1	20.1	20.1	20.1
85°	10.6	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
87.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
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: P584046

CATALOG NUMBER: HC820D010-HM80520927-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	871.0	871.0	871.0	871.0	871.0	871.0	871.0	871.0
2.5°	853.3	853.3	853.3	854.5	852.1	852.1	852.1	852.1
5°	833.2	832.0	830.8	832.0	829.6	829.6	828.5	828.5
7.5°	808.4	807.2	806.0	806.0	803.6	803.6	802.5	801.3
10°	781.2	778.8	780.0	777.6	776.5	775.3	774.1	772.9
12.5°	751.6	749.3	748.1	745.7	743.4	742.2	743.4	741.0
15°	719.7	716.2	715.0	712.6	710.3	709.1	709.1	707.9
17.5°	684.3	681.9	680.7	678.3	677.2	674.8	673.6	672.4
20°	651.2	645.3	646.4	644.1	642.9	638.2	638.2	639.3
22.5°	614.5	611.0	608.6	606.2	605.1	602.7	602.7	601.5
25°	577.9	574.3	573.2	570.8	569.6	567.2	566.1	566.1
27.5°	542.4	537.7	537.7	535.3	533.0	531.8	530.6	529.4
30°	504.6	501.0	499.9	499.9	498.7	498.7	495.1	496.3
32.5°	469.3	466.9	465.7	463.3	463.3	462.2	462.2	458.6
35°	433.8	430.2	431.4	429.1	427.9	426.7	427.9	426.7
37.5°	399.5	397.2	397.2	394.8	394.8	393.6	392.4	394.8
40°	365.2	364.1	362.9	361.7	362.9	361.7	359.3	360.5
42.5°	331.0	331.0	329.8	329.8	328.6	328.6	328.6	328.6
45°	300.2	299.0	299.0	297.9	297.9	297.9	297.9	296.7
47.5°	269.5	268.3	268.3	268.3	267.1	267.1	266.0	267.1
50°	239.9	239.9	238.8	238.8	239.9	238.8	237.6	237.6
52.5°	212.8	212.8	211.6	211.6	210.4	209.2	210.4	210.4
55°	187.9	186.8	185.6	185.6	184.4	183.2	183.2	184.4
57.5°	164.3	163.1	161.9	161.9	159.6	158.4	158.4	158.4
60°	141.8	139.5	139.5	138.3	138.3	137.1	137.1	137.1
62.5°	120.6	119.4	119.4	119.4	119.4	118.2	118.2	118.2
65°	102.8	102.8	102.8	104.0	104.0	105.2	105.2	105.2
67.5°	88.6	89.8	89.8	89.8	91.0	91.0	91.0	89.8
70°	75.6	75.6	75.6	76.8	76.8	76.8	76.8	76.8
72.5°	62.6	62.6	62.6	62.6	62.6	62.6	62.6	62.6
75°	49.6	50.8	50.8	50.8	49.6	50.8	50.8	49.6
77.5°	39.0	39.0	39.0	39.0	39.0	39.0	39.0	39.0
80°	29.6	29.6	29.6	29.6	29.6	29.6	29.6	29.6
82.5°	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
85°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
87.5°	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
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)