

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: P583812

Luminaire Tested: **HC810D010-HM80520935-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P583812
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: HC810D010-HM80520935-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1005.8 lumens
Efficiency: N/A
Efficacy: 101.6 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

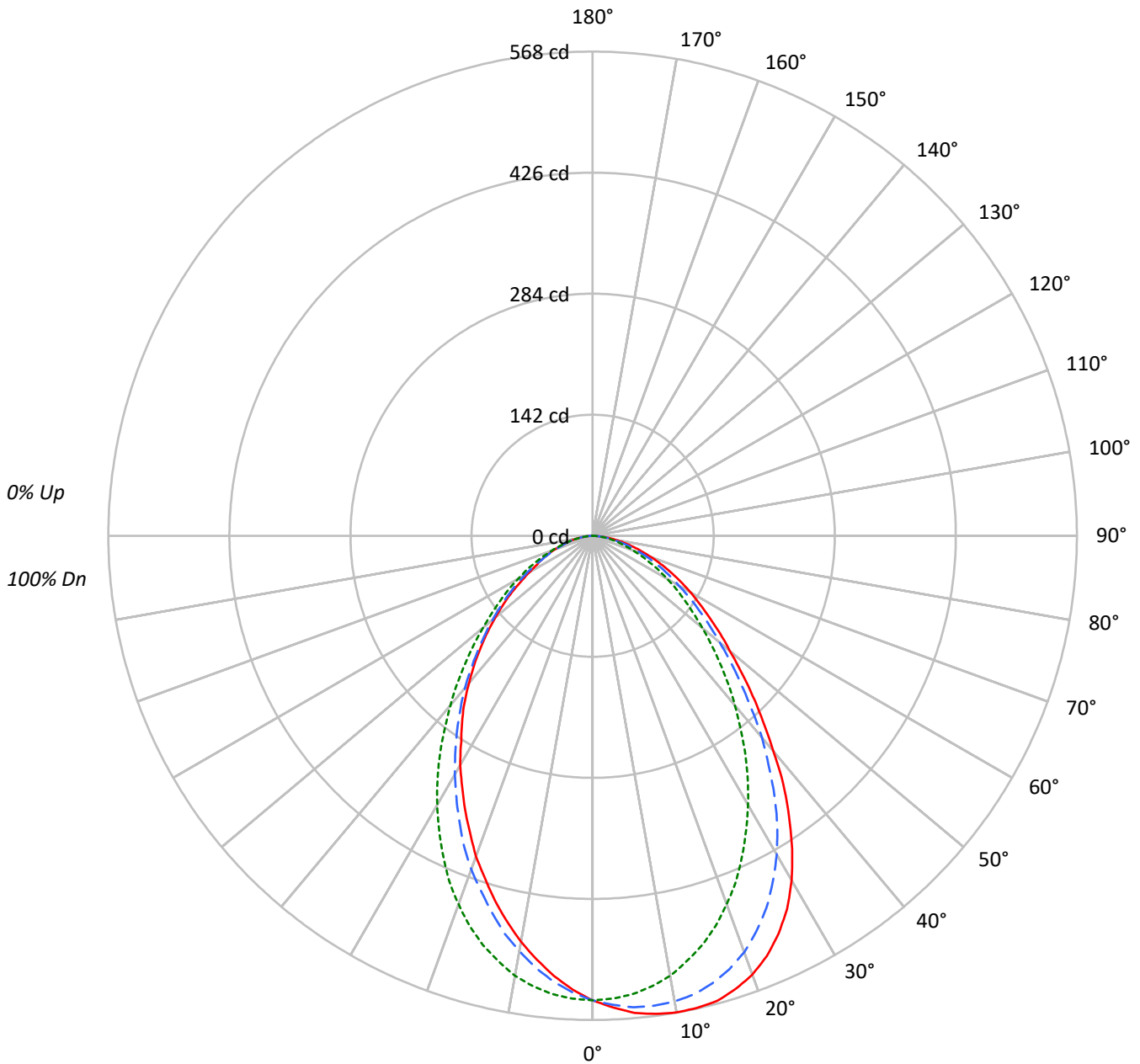
Input Watts (W): 9.9
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87																			
2	102	95	89	84	99	93	88	83	90	85	81	86	83	79	83	80	78	76																			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66																			
4	87	76	69	63	85	75	68	62	73	67	62	71	65	61	68	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	59	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41																			
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38																			
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34																			
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	16806	16806	16806
5°	17393	16709	16044
10°	17779	16414	15142
15°	18034	15863	14139
20°	17980	15092	13126
25°	17536	14113	12051
30°	16614	12982	11059
35°	15114	11745	10051
40°	13276	10446	9077
45°	11574	9188	8094
50°	10074	8050	7129
55°	8984	7075	6204
60°	8159	6204	5292
65°	7340	5392	4794
70°	6537	4598	4337
75°	5731	3884	3693
80°	4866	3161	3285
85°	3644	2335	2654



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.0	5.1
10°-20°	140.6	14.0
20°-30°	195.2	19.4
30°-40°	201.8	20.1
40°-50°	169.0	16.8
50°-60°	122.7	12.2
60°-70°	77.4	7.7
70°-80°	38.4	3.8
80°-90°	9.6	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°	386.9	38.5
0°-40°	588.7	58.5
0°-60°	880.4	87.5
0°-90°	1005.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1005.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	545	545	545	545	545	
5°	562	555	540	525	518	54
15°	565	543	497	457	443	159
25°	515	482	415	370	354	236
35°	402	372	312	277	267	250
45°	265	246	211	190	186	205
55°	167	152	132	121	115	151
65°	101	88	74	65	66	100
75°	48	40	33	31	31	52
85°	10	8	7	8	8	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°	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0
2.5°	553.9	553.9	554.6	553.9	553.9	553.9	553.0	553.0	552.3	552.3	550.9
5°	561.9	560.5	561.9	560.5	560.5	560.5	559.8	558.2	557.5	556.0	555.3
7.5°	565.7	564.9	564.9	564.2	564.2	563.4	562.7	561.9	559.1	558.2	556.0
10°	567.8	567.1	567.1	566.4	564.9	564.9	563.4	562.7	559.1	557.5	554.6
12.5°	567.1	567.1	567.1	566.4	564.2	563.4	561.9	559.8	556.8	553.9	550.9
15°	564.9	564.9	563.4	562.7	560.5	559.1	558.2	554.6	551.6	547.9	543.4
17.5°	557.5	557.5	556.8	555.3	553.0	551.6	550.2	546.4	543.4	537.5	533.1
20°	547.9	547.2	546.4	544.3	542.0	541.3	539.0	533.8	530.2	525.8	519.9
22.5°	533.8	533.1	532.4	530.9	527.2	525.8	524.2	520.6	513.9	509.4	502.1
25°	515.4	515.4	513.9	511.7	508.0	506.5	504.2	500.6	494.6	488.0	482.1
27.5°	493.9	493.2	491.0	489.5	486.6	484.3	480.7	476.2	470.2	465.1	457.7
30°	466.6	466.6	465.1	462.9	459.2	457.7	454.7	449.5	443.7	437.0	431.9
32.5°	435.5	435.5	433.3	431.9	429.6	425.9	425.1	419.3	414.1	408.9	403.0
35°	401.5	402.2	400.7	397.9	394.1	394.1	392.6	387.4	381.5	376.3	371.9
37.5°	367.5	365.3	364.6	363.0	360.8	357.8	356.4	354.2	349.1	345.3	338.6
40°	329.8	330.6	329.0	327.5	326.8	324.7	323.8	320.2	316.5	312.0	309.0
42.5°	295.8	295.8	295.8	294.2	292.8	290.6	289.8	287.6	283.2	280.2	275.9
45°	265.4	263.2	263.2	262.5	261.8	260.2	258.1	256.6	253.6	251.5	246.2
47.5°	235.8	236.6	235.8	235.1	232.9	232.2	231.4	228.5	225.5	223.3	219.6
50°	210.0	211.4	210.0	210.0	208.5	207.8	206.3	204.1	201.8	198.2	194.5
52.5°	188.6	188.6	187.8	187.0	184.9	183.4	182.6	181.9	178.3	175.3	172.2
55°	167.1	167.8	167.8	165.6	164.9	163.4	162.6	160.5	159.0	154.6	152.3
57.5°	148.6	147.8	148.6	147.1	145.7	144.2	143.4	142.0	139.8	136.8	133.8
60°	132.3	130.9	130.9	130.2	128.6	127.9	126.5	124.2	122.0	119.0	116.8
62.5°	116.1	115.4	114.6	113.8	112.4	111.7	110.9	108.7	106.5	104.2	102.0
65°	100.6	100.6	99.8	98.3	97.6	96.9	96.2	94.6	91.7	90.1	88.0
67.5°	86.5	85.8	85.8	84.3	82.8	82.1	82.1	80.7	78.4	76.2	74.6
70°	72.5	73.2	72.5	71.8	70.2	70.2	68.8	68.0	65.0	64.3	62.1
72.5°	59.9	59.9	59.1	59.1	57.7	57.0	57.0	55.4	54.0	52.5	51.0
75°	48.1	48.1	48.1	47.4	46.6	45.1	45.1	44.4	42.9	41.3	39.9
77.5°	37.7	37.0	37.0	36.2	35.5	34.7	34.7	34.0	32.6	31.9	30.3
80°	27.4	26.6	26.6	26.6	25.1	25.8	25.1	24.4	23.7	23.0	22.2
82.5°	17.8	18.5	18.5	17.8	16.9	16.9	16.9	16.2	16.2	15.5	14.8
85°	10.3	10.3	10.3	10.3	9.6	9.6	9.6	8.9	8.9	8.9	8.2
87.5°	4.4	4.4	4.4	4.4	4.4	4.4	3.7	3.7	3.7	3.7	3.7
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°	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0
2.5°	550.9	549.4	548.6	547.9	547.9	547.2	546.4	545.0	545.0	543.4	542.7
5°	553.9	551.6	550.2	548.6	547.9	546.4	545.0	542.7	542.0	539.8	537.5
7.5°	554.6	550.9	549.4	546.4	545.0	543.4	540.5	538.3	535.4	533.1	530.2
10°	551.6	548.6	545.0	541.3	540.5	538.3	533.8	530.9	527.2	524.2	519.9
12.5°	547.2	542.7	539.0	534.6	532.4	530.2	525.8	521.3	516.1	511.0	506.5
15°	539.8	534.6	529.5	524.2	521.3	519.0	513.9	508.7	503.5	496.9	492.5
17.5°	528.6	522.7	517.6	511.0	508.0	505.8	499.1	493.2	486.6	479.8	475.4
20°	514.6	507.2	501.4	493.9	491.7	488.0	481.4	474.7	467.3	459.9	454.7
22.5°	496.2	488.7	482.1	474.7	471.1	467.3	460.6	452.6	445.1	439.2	434.0
25°	474.7	468.1	459.9	453.3	448.8	444.4	437.0	430.3	423.7	414.8	409.6
27.5°	451.0	442.9	437.0	428.2	423.7	420.7	412.6	403.8	397.9	389.7	383.8
30°	424.4	417.0	410.4	401.5	397.0	394.1	386.7	378.6	372.6	364.6	358.7
32.5°	396.3	388.2	380.1	374.2	369.0	366.0	357.8	352.7	345.3	338.6	332.0
35°	366.0	357.8	351.9	343.8	340.9	337.9	331.3	324.7	317.9	312.0	306.9
37.5°	333.4	327.5	320.9	315.0	312.8	309.8	301.7	295.8	290.6	284.6	280.2
40°	301.7	296.5	292.1	286.2	282.5	280.2	274.3	269.1	263.2	259.5	255.1
42.5°	272.9	267.0	262.5	258.1	254.3	252.2	247.0	243.3	238.8	235.1	229.9
45°	242.6	239.6	234.4	230.7	228.5	225.5	221.8	217.4	213.7	210.7	207.0
47.5°	215.9	213.0	209.3	204.8	203.4	201.1	197.4	194.5	191.5	188.6	184.9
50°	191.5	187.8	184.9	181.9	180.4	178.3	174.5	173.0	170.8	167.8	165.6
52.5°	169.4	166.4	163.4	159.7	159.0	157.5	155.3	152.3	150.1	148.6	147.1
55°	149.4	146.4	144.2	141.2	140.5	139.0	136.1	134.6	133.1	131.6	130.2
57.5°	131.6	128.6	125.7	124.2	122.7	121.3	120.6	118.3	116.8	116.1	114.6
60°	115.4	112.4	110.2	107.9	107.2	106.5	105.1	103.5	102.0	100.6	99.8
62.5°	99.8	96.9	95.4	93.9	92.4	92.4	91.0	89.4	88.0	87.3	85.8
65°	85.8	84.3	82.1	79.8	79.1	79.1	76.9	76.2	75.4	73.9	72.5
67.5°	72.5	71.0	68.8	68.0	67.3	66.6	65.7	64.3	62.9	62.1	60.6
70°	60.6	59.1	57.7	57.0	56.3	55.4	54.0	53.2	51.8	51.0	50.2
72.5°	48.8	48.1	46.6	45.8	45.1	44.4	43.6	42.9	41.3	40.6	39.9
75°	39.2	38.5	37.0	36.2	35.5	35.5	34.7	33.3	32.6	32.6	31.9
77.5°	29.6	28.8	28.1	27.4	26.6	26.6	25.8	25.1	24.4	24.4	23.7
80°	21.4	20.7	20.0	20.0	20.0	19.2	18.5	18.5	17.8	17.8	16.9
82.5°	14.1	14.1	13.3	13.3	13.3	12.6	12.6	11.8	11.8	11.8	11.8
85°	8.2	8.2	8.2	7.5	7.5	7.5	7.5	7.5	7.5	6.6	7.5
87.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0
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°	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0
2.5°	542.0	541.3	539.8	539.8	538.3	538.3	537.5	536.8	536.1	535.4	534.6
5°	536.8	533.8	532.4	531.6	530.2	529.5	527.2	525.8	525.0	523.5	522.0
7.5°	527.2	524.2	521.3	520.6	519.9	516.9	514.6	512.4	511.0	509.4	508.0
10°	516.1	513.1	509.4	508.0	506.5	502.8	499.8	497.6	494.6	491.7	491.0
12.5°	502.8	498.3	493.9	492.5	490.2	486.6	483.6	479.8	477.7	473.9	473.2
15°	487.3	482.1	478.4	474.7	473.2	469.5	464.3	461.4	457.0	455.4	451.8
17.5°	468.8	463.6	458.4	457.0	454.7	449.5	444.4	440.7	436.2	434.0	431.9
20°	449.5	442.9	437.8	436.2	433.3	428.9	423.7	420.0	416.3	411.8	409.6
22.5°	427.4	420.0	415.5	411.8	411.1	405.9	400.0	397.0	394.1	390.4	387.4
25°	403.0	396.3	391.1	388.2	386.7	382.2	377.8	374.2	369.7	367.5	363.8
27.5°	377.8	373.5	366.7	363.8	361.6	357.8	352.7	350.5	346.1	343.1	340.9
30°	353.4	346.8	343.1	339.4	337.2	333.4	329.0	326.8	323.1	320.2	317.9
32.5°	326.8	322.4	317.2	315.8	312.8	309.0	306.1	302.4	299.4	296.5	295.8
35°	302.4	296.5	291.4	289.8	287.6	283.9	282.5	280.2	276.6	275.9	272.9
37.5°	275.9	272.9	267.0	264.7	264.0	261.0	258.1	256.6	254.3	252.2	251.5
40°	250.6	247.0	244.0	241.8	240.3	238.1	235.1	234.4	232.9	229.9	229.2
42.5°	227.1	223.3	220.3	219.6	217.4	215.2	213.7	211.4	210.7	210.0	208.5
45°	204.1	201.8	198.9	198.2	197.4	194.5	193.0	191.5	190.0	189.3	187.8
47.5°	183.4	181.1	179.0	178.3	176.7	176.0	173.8	173.0	170.8	170.1	169.4
50°	163.4	161.9	160.5	159.7	158.2	157.5	156.0	154.6	153.0	152.3	151.6
52.5°	145.7	144.2	142.7	142.0	141.2	139.8	138.2	136.8	136.1	135.3	134.6
55°	128.6	127.2	126.5	125.7	125.0	124.2	122.0	121.3	120.6	119.8	118.3
57.5°	113.1	111.7	110.2	110.2	109.4	108.7	107.2	105.8	105.8	104.2	102.8
60°	99.0	97.6	96.2	95.4	94.6	93.2	92.4	91.7	91.0	90.1	88.7
62.5°	84.3	83.5	82.1	82.1	80.7	79.8	79.1	78.4	77.6	76.2	75.4
65°	71.8	71.0	69.5	68.8	68.8	68.0	66.6	65.7	65.0	65.0	64.3
67.5°	59.9	59.1	57.7	57.0	57.0	56.3	55.4	55.4	54.7	54.0	54.7
70°	49.5	48.1	48.1	47.4	47.4	46.6	45.8	45.8	45.8	46.6	46.6
72.5°	39.2	38.5	37.7	37.7	37.7	37.7	37.0	37.0	37.7	38.5	38.5
75°	31.0	30.3	30.3	30.3	29.6	29.6	30.3	30.3	31.0	31.0	31.0
77.5°	23.0	23.0	23.0	23.0	23.0	23.0	23.7	23.7	24.4	24.4	24.4
80°	16.9	16.9	16.9	16.9	16.9	17.8	17.8	17.8	17.8	17.8	18.5
82.5°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	12.6	12.6	12.6	12.6
85°	6.6	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
87.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	545.0	545.0	545.0	545.0	545.0	545.0	545.0	545.0
2.5°	533.8	533.8	533.8	534.6	533.1	533.1	533.1	533.1
5°	521.3	520.6	519.9	520.6	519.0	519.0	518.3	518.3
7.5°	505.8	505.1	504.2	504.2	502.8	502.8	502.1	501.4
10°	488.7	487.3	488.0	486.6	485.8	485.0	484.3	483.6
12.5°	470.2	468.8	468.1	466.6	465.1	464.3	465.1	463.6
15°	450.3	448.1	447.4	445.8	444.4	443.7	443.7	442.9
17.5°	428.2	426.6	425.9	424.4	423.7	422.3	421.4	420.7
20°	407.5	403.8	404.5	403.0	402.2	399.3	399.3	400.0
22.5°	384.5	382.2	380.8	379.4	378.6	377.1	377.1	376.3
25°	361.6	359.4	358.7	357.1	356.4	355.0	354.2	354.2
27.5°	339.4	336.4	336.4	335.0	333.4	332.7	332.0	331.3
30°	315.8	313.5	312.8	312.8	312.0	312.0	309.8	310.6
32.5°	293.5	292.1	291.4	289.8	289.8	289.1	289.1	286.9
35°	271.4	269.1	269.8	268.4	267.7	267.0	267.7	267.0
37.5°	249.9	248.5	248.5	247.0	247.0	246.2	245.4	247.0
40°	228.5	227.8	227.1	226.2	227.1	226.2	224.8	225.5
42.5°	207.0	207.0	206.3	206.3	205.5	205.5	205.5	205.5
45°	187.8	187.0	187.0	186.3	186.3	186.3	186.3	185.6
47.5°	168.6	167.8	167.8	167.8	167.1	167.1	166.4	167.1
50°	150.1	150.1	149.4	149.4	150.1	149.4	148.6	148.6
52.5°	133.1	133.1	132.3	132.3	131.6	130.9	131.6	131.6
55°	117.6	116.8	116.1	116.1	115.4	114.6	114.6	115.4
57.5°	102.8	102.0	101.3	101.3	99.8	99.0	99.0	99.0
60°	88.7	87.3	87.3	86.5	86.5	85.8	85.8	85.8
62.5°	75.4	74.6	74.6	74.6	74.6	73.9	73.9	73.9
65°	64.3	64.3	64.3	65.0	65.0	65.7	65.7	65.7
67.5°	55.4	56.3	56.3	56.3	57.0	57.0	57.0	56.3
70°	47.4	47.4	47.4	48.1	48.1	48.1	48.1	48.1
72.5°	39.2	39.2	39.2	39.2	39.2	39.2	39.2	39.2
75°	31.0	31.9	31.9	31.9	31.0	31.9	31.9	31.0
77.5°	24.4	24.4	24.4	24.4	24.4	24.4	24.4	24.4
80°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5
82.5°	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
85°	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
87.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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)