

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: P583804

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

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P583804  
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-HM80520935-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1053.1 lumens  
Efficiency: N/A  
Efficacy: 106.4 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

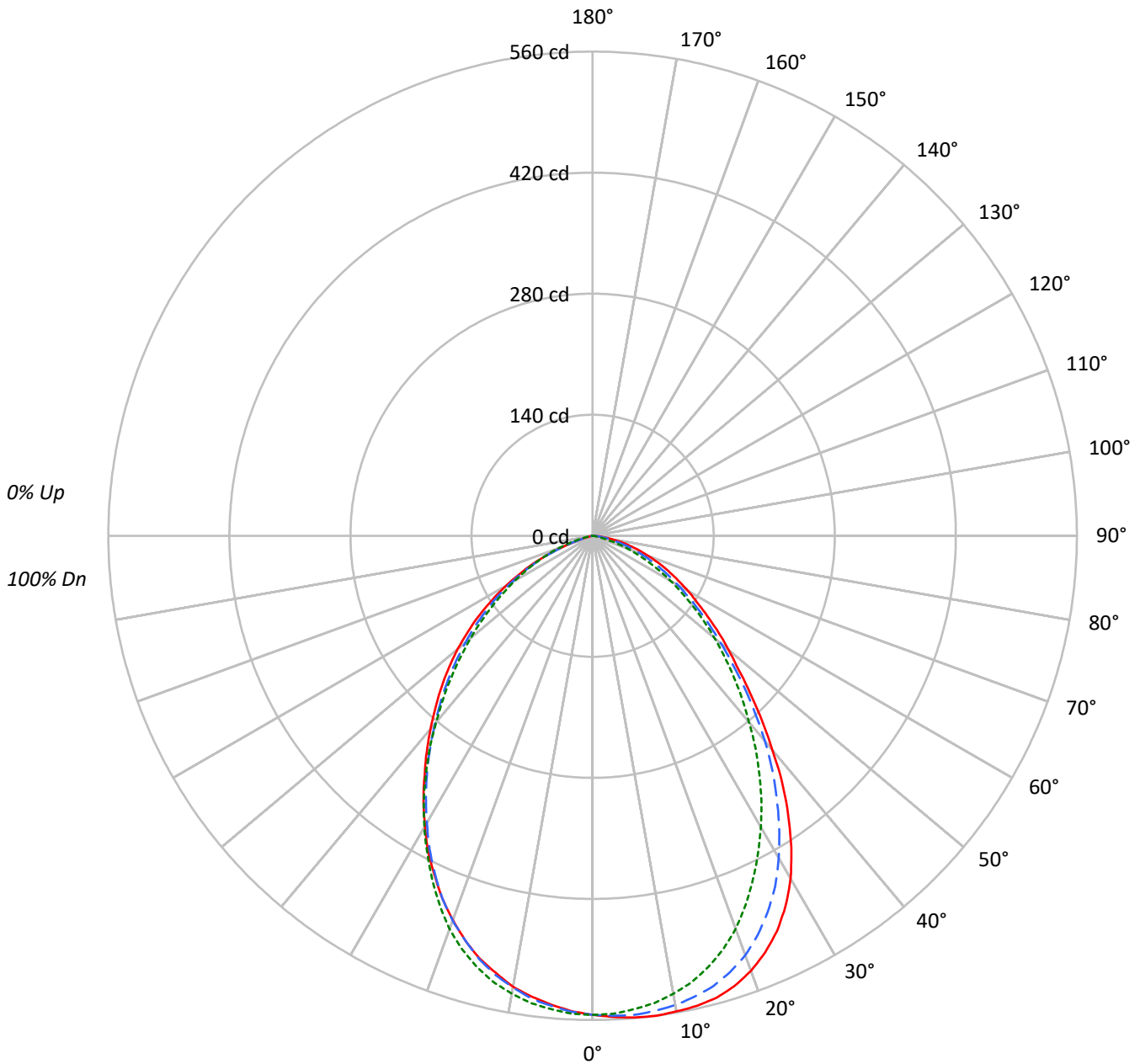
Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20					20					20					20					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	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°	17086	17086	17086
5°	17313	17015	16855
10°	17491	16840	16586
15°	17664	16486	16154
20°	17576	15876	15512
25°	17165	14926	14722
30°	16308	13855	13801
35°	14843	12641	12754
40°	13010	11315	11734
45°	11229	10065	10776
50°	9830	8832	9758
55°	8709	7591	8586
60°	7851	6389	7117
65°	7070	5129	5458
70°	6203	3742	3002
75°	5290	1930	786
80°	4084	533	124
85°	2654	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.3	5.0
10°-20°	147.0	14.0
20°-30°	208.6	19.8
30°-40°	219.6	20.9
40°-50°	186.8	17.7
50°-60°	135.0	12.8
60°-70°	76.8	7.3
70°-80°	24.2	2.3
80°-90°	2.9	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°	407.8	38.7
0°-40°	627.4	59.6
0°-60°	949.2	90.1
0°-90°	1053.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1053.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	554	554	554	554	554	
5°	559	556	550	546	544	53
15°	553	539	516	507	506	156
25°	504	479	439	431	433	231
35°	394	371	336	334	339	245
45°	258	248	231	237	247	200
55°	162	150	141	149	160	146
65°	97	84	70	70	75	96
75°	44	34	16	8	7	48
85°	8	4	0	0	0	10
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°	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1
2.5°	557.0	557.7	556.3	556.3	557.7	556.3	557.0	557.0	556.3	556.3	555.6
5°	559.3	558.6	558.6	558.6	559.3	557.7	557.0	557.7	556.3	556.3	556.3
7.5°	560.0	560.0	559.3	558.6	558.6	558.6	557.7	557.0	556.3	554.8	554.1
10°	558.6	558.6	559.3	557.7	557.7	556.3	556.3	554.8	554.8	553.3	551.1
12.5°	557.0	556.3	556.3	554.8	554.8	553.3	553.3	551.1	550.4	548.1	545.9
15°	553.3	552.6	551.1	550.4	549.7	549.0	547.4	546.7	544.5	541.5	539.3
17.5°	545.9	545.2	544.5	542.9	541.5	540.8	540.1	537.8	534.9	532.6	528.9
20°	535.6	534.9	534.9	532.6	531.9	529.7	528.9	526.0	523.7	519.3	516.4
22.5°	521.5	522.3	520.8	519.3	517.8	515.7	514.1	511.2	507.5	503.0	499.3
25°	504.5	505.2	503.8	502.3	500.0	498.6	497.1	492.7	489.0	483.8	479.4
27.5°	483.1	483.1	483.1	481.5	477.9	477.2	475.6	471.2	466.0	461.6	457.1
30°	458.0	457.1	457.1	455.0	453.5	450.5	448.3	444.6	440.9	435.7	430.6
32.5°	427.6	428.3	426.1	424.7	422.4	422.4	419.5	416.5	412.0	406.9	401.7
35°	394.3	395.0	393.5	392.8	389.1	388.4	387.6	383.9	380.9	377.3	371.3
37.5°	360.2	359.5	358.8	358.8	356.5	355.1	353.6	351.3	346.9	344.0	341.0
40°	323.2	323.2	323.2	322.5	321.8	320.3	319.6	318.0	315.2	312.2	310.0
42.5°	290.0	290.0	289.2	288.5	287.0	287.8	286.3	284.8	281.9	279.6	278.1
45°	257.5	257.5	257.5	258.2	256.7	254.5	254.5	253.0	251.5	250.0	247.9
47.5°	228.6	230.8	229.3	228.6	229.3	226.3	226.3	224.9	223.5	221.9	219.0
50°	204.9	204.9	204.9	203.4	202.7	202.7	200.5	199.1	198.2	196.8	193.8
52.5°	183.4	182.0	182.0	181.3	180.5	179.0	179.0	177.5	174.5	173.1	170.9
55°	162.0	162.0	161.3	160.5	159.7	159.0	158.3	156.1	154.6	152.4	150.1
57.5°	142.8	144.2	143.5	142.1	140.5	140.5	139.1	137.6	135.3	133.2	130.9
60°	127.3	126.5	126.5	125.7	124.3	123.6	122.8	120.6	118.4	116.1	113.9
62.5°	110.9	110.9	110.9	109.5	108.1	107.2	106.5	105.1	102.0	99.9	98.4
65°	96.9	96.2	95.4	94.7	94.0	92.4	91.7	90.3	88.0	85.8	83.5
67.5°	82.8	82.1	82.1	81.4	79.2	78.4	78.4	76.2	73.9	71.8	69.6
70°	68.8	68.8	68.8	67.3	66.6	65.9	65.1	63.6	61.4	59.1	57.0
72.5°	57.0	56.3	56.3	55.5	53.2	52.5	51.8	50.2	48.1	46.6	45.1
75°	44.4	44.4	43.6	42.9	42.2	41.5	40.6	39.2	37.0	34.7	34.0
77.5°	34.0	33.3	33.3	32.6	31.0	30.3	30.3	28.8	26.7	25.1	23.7
80°	23.0	23.7	23.0	22.2	21.4	20.7	20.0	19.2	17.8	16.2	14.8
82.5°	14.1	14.8	14.1	14.1	13.3	12.6	12.6	11.1	10.3	9.6	8.9
85°	7.5	7.5	7.5	7.5	6.6	6.6	6.6	5.9	5.2	4.4	4.4
87.5°	2.2	3.0	2.2	2.2	2.2	2.2	2.2	2.2	1.4	1.4	1.4
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°	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1
2.5°	556.3	555.6	554.8	554.8	554.8	554.8	554.8	554.1	553.3	553.3	553.3
5°	554.8	554.8	554.8	554.1	553.3	553.3	551.8	551.1	550.4	549.7	549.0
7.5°	553.3	551.8	551.1	550.4	549.7	549.7	548.1	546.7	546.7	545.2	543.7
10°	549.0	548.1	546.7	545.2	544.5	543.7	542.2	540.1	539.3	537.8	536.3
12.5°	543.7	542.2	540.8	537.8	537.1	536.3	533.3	531.2	529.7	528.9	525.3
15°	537.1	534.0	531.9	528.2	527.4	526.0	523.7	521.5	518.5	516.4	514.8
17.5°	525.3	522.3	518.5	514.8	513.4	513.4	509.6	506.8	503.0	501.6	498.6
20°	511.2	507.5	504.5	500.0	497.9	495.6	493.4	489.0	486.0	483.8	480.1
22.5°	494.9	489.7	486.0	481.5	477.9	475.6	471.9	468.3	464.6	462.3	459.4
25°	474.2	469.7	463.9	459.4	457.1	454.2	449.8	446.1	442.3	438.7	437.2
27.5°	451.2	445.3	440.2	435.0	432.7	430.6	425.4	420.9	417.9	414.2	412.8
30°	426.1	420.2	414.2	409.9	407.6	403.9	401.0	395.8	392.1	389.1	385.4
32.5°	397.3	392.8	387.6	380.9	379.5	376.6	372.1	369.9	365.4	363.2	360.2
35°	366.1	363.2	358.1	352.9	350.6	349.2	345.5	341.0	338.1	335.8	334.4
37.5°	336.6	332.8	327.7	324.1	322.5	320.3	315.9	313.6	310.7	309.3	306.3
40°	304.8	301.1	297.4	295.2	292.9	291.5	288.5	286.3	283.3	281.1	280.3
42.5°	273.7	271.5	268.5	265.5	264.8	262.6	261.1	258.9	256.7	255.9	253.7
45°	245.6	243.4	240.4	237.5	236.7	235.2	234.5	232.2	230.8	230.8	230.8
47.5°	217.4	215.3	212.3	210.8	211.6	208.7	208.7	207.8	206.4	206.4	207.1
50°	192.3	189.4	188.6	187.2	185.7	184.1	185.0	182.7	182.7	184.1	183.4
52.5°	168.6	165.8	164.9	163.5	162.8	162.8	162.0	162.0	161.3	162.0	162.0
55°	147.2	145.0	143.5	142.1	141.2	141.2	141.2	140.5	139.8	141.2	142.1
57.5°	128.0	127.3	125.7	123.6	122.8	122.0	121.3	121.3	121.3	121.3	122.0
60°	110.9	109.5	108.1	105.8	105.8	105.1	104.3	103.6	103.6	103.6	103.6
62.5°	96.2	94.0	91.7	90.3	89.5	88.8	88.0	86.5	86.5	86.5	86.5
65°	81.4	79.2	77.6	76.2	74.8	74.8	73.2	72.5	71.0	70.3	68.8
67.5°	67.3	65.9	64.3	62.1	61.4	60.7	59.1	58.4	56.3	55.5	54.7
70°	54.7	52.5	51.1	49.5	48.8	47.4	45.9	44.4	42.9	41.5	39.9
72.5°	42.9	40.6	39.2	37.7	36.3	36.3	34.0	32.6	30.3	28.8	26.7
75°	31.9	29.6	28.1	25.8	25.1	24.4	22.2	20.7	18.5	16.2	14.8
77.5°	21.4	20.0	18.5	16.2	14.8	14.8	12.6	11.1	9.6	7.5	6.6
80°	13.3	11.8	10.3	8.9	8.9	7.5	6.6	5.2	3.7	3.0	2.2
82.5°	7.5	6.6	5.9	4.4	4.4	3.7	3.0	2.2	1.4	0.7	0.7
85°	3.7	3.0	2.2	2.2	1.4	1.4	1.4	0.7	0.7	0.0	0.0
87.5°	1.4	0.7	0.7	0.7	0.7	0.7	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°	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1
2.5°	552.6	552.6	551.8	551.8	551.8	551.1	551.8	551.1	551.1	551.1	551.8
5°	549.7	548.1	548.1	547.4	547.4	546.7	547.4	546.7	545.9	545.2	545.9
7.5°	543.7	542.2	541.5	540.8	540.8	540.8	540.1	539.3	540.1	537.8	539.3
10°	535.6	534.9	533.3	532.6	531.9	532.6	531.9	530.4	530.4	530.4	529.7
12.5°	525.3	523.7	523.0	522.3	520.8	520.8	521.5	520.1	520.1	518.5	518.5
15°	512.7	511.2	509.6	509.6	508.2	508.2	507.5	507.5	506.8	506.0	506.0
17.5°	497.1	494.9	493.4	494.1	493.4	492.7	492.7	491.1	490.4	491.1	491.1
20°	478.6	477.2	475.6	476.4	474.9	474.2	474.9	472.7	473.5	473.5	473.5
22.5°	458.0	457.1	455.0	455.0	453.5	452.7	453.5	453.5	454.2	453.5	453.5
25°	435.0	433.4	432.0	432.0	431.3	430.6	431.3	432.0	431.3	432.0	432.0
27.5°	410.6	408.3	408.3	406.9	406.9	407.6	406.9	407.6	408.3	408.3	409.9
30°	383.9	383.2	382.5	381.8	381.8	382.5	382.5	382.5	383.2	384.6	384.6
32.5°	358.8	357.4	355.8	355.8	357.4	356.5	357.4	357.4	358.8	358.8	360.2
35°	331.4	331.4	329.9	330.7	330.7	330.7	330.7	332.1	333.7	334.4	335.8
37.5°	306.3	304.0	304.8	304.8	305.5	304.8	307.0	307.0	308.4	308.4	310.0
40°	278.9	278.9	279.6	278.9	279.6	279.6	281.1	282.6	283.3	284.8	285.6
42.5°	253.0	254.5	253.0	253.7	254.5	255.2	255.9	256.7	259.6	261.1	263.4
45°	229.3	230.1	230.8	231.5	230.8	232.2	233.1	234.5	236.7	237.5	238.2
47.5°	206.4	207.1	207.8	208.7	208.7	210.1	210.8	212.3	213.8	214.6	215.3
50°	184.1	185.7	186.4	186.4	187.2	188.6	190.2	190.2	191.6	193.8	194.6
52.5°	164.2	164.2	165.8	166.5	167.2	167.2	169.4	170.2	170.9	172.4	173.8
55°	142.1	144.2	145.0	145.0	146.5	148.0	148.7	149.4	149.4	152.4	152.4
57.5°	122.8	123.6	125.0	125.0	125.0	127.3	127.3	128.7	129.5	130.2	131.6
60°	103.6	105.1	105.1	105.8	105.1	106.5	107.2	108.8	109.5	110.2	110.9
62.5°	85.8	85.8	86.5	86.5	86.5	86.5	88.0	88.0	89.5	90.3	91.0
65°	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	69.6	69.6	71.0
67.5°	53.2	52.5	51.1	51.8	51.1	51.1	50.2	50.2	51.1	51.1	52.5
70°	38.5	37.7	36.3	36.3	35.5	34.7	34.0	33.3	32.6	32.6	32.6
72.5°	25.1	23.7	21.4	20.7	20.7	19.2	17.8	17.1	17.1	17.1	17.1
75°	12.6	11.1	9.6	8.9	8.9	7.5	8.2	7.5	7.5	7.5	7.5
77.5°	5.2	3.7	3.0	3.0	3.0	2.2	2.2	2.2	2.2	2.2	2.2
80°	1.4	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.7	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: P583804

CATALOG NUMBER: HC810D010-HM80520935-81RWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	554.1	554.1	554.1	554.1	554.1	554.1	554.1	554.1
2.5°	551.1	551.1	549.7	550.4	550.4	550.4	550.4	550.4
5°	544.5	545.2	544.5	545.2	545.2	544.5	544.5	544.5
7.5°	537.8	538.5	537.8	538.5	538.5	538.5	537.8	537.8
10°	529.7	529.7	529.7	529.7	529.7	528.9	529.7	529.7
12.5°	518.5	518.5	518.5	519.3	519.3	518.5	518.5	517.8
15°	506.8	505.2	506.0	506.8	506.0	506.0	506.0	506.0
17.5°	490.4	491.1	490.4	490.4	490.4	490.4	491.1	490.4
20°	473.5	473.5	474.2	473.5	473.5	473.5	473.5	472.7
22.5°	454.2	453.5	453.5	454.2	454.2	453.5	454.2	454.2
25°	432.7	433.4	432.7	432.7	433.4	433.4	433.4	432.7
27.5°	409.9	410.6	411.3	410.6	410.6	410.6	411.3	412.0
30°	386.2	387.6	386.2	386.2	387.6	386.9	387.6	387.6
32.5°	361.0	363.2	361.7	363.2	363.2	364.0	363.2	364.0
35°	335.8	338.1	338.1	338.1	338.8	339.6	339.6	338.8
37.5°	312.2	312.9	312.9	314.4	315.2	315.9	315.9	315.2
40°	287.8	289.2	290.0	290.0	290.0	291.5	292.9	291.5
42.5°	264.1	264.8	265.5	265.5	267.1	267.8	268.5	268.5
45°	241.1	242.7	243.4	244.1	244.8	246.3	245.6	247.1
47.5°	217.4	219.7	220.4	221.2	222.6	223.5	224.2	224.9
50°	196.0	197.5	197.5	199.1	201.2	201.2	202.7	203.4
52.5°	174.5	175.4	176.1	176.8	178.3	179.8	179.8	181.3
55°	153.9	154.6	154.6	155.3	156.1	159.0	159.7	159.7
57.5°	132.5	132.5	133.9	134.6	135.3	136.9	136.9	136.9
60°	111.7	112.4	112.4	113.2	113.9	115.4	116.1	115.4
62.5°	91.0	91.7	91.7	92.4	94.0	94.7	94.0	94.0
65°	71.8	72.5	72.5	73.2	74.8	74.8	73.9	74.8
67.5°	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5
70°	33.3	32.6	31.9	32.6	32.6	32.6	31.9	33.3
72.5°	16.2	17.1	17.1	17.1	17.1	17.1	17.1	16.2
75°	7.5	7.5	6.6	6.6	6.6	7.5	7.5	6.6
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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)