

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: P593545

Luminaire Tested: **HC810D010-HM80520950-81RWWC**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593545  
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-HM80520950-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1084.3 lumens  
Efficiency: N/A  
Efficacy: 109.5 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

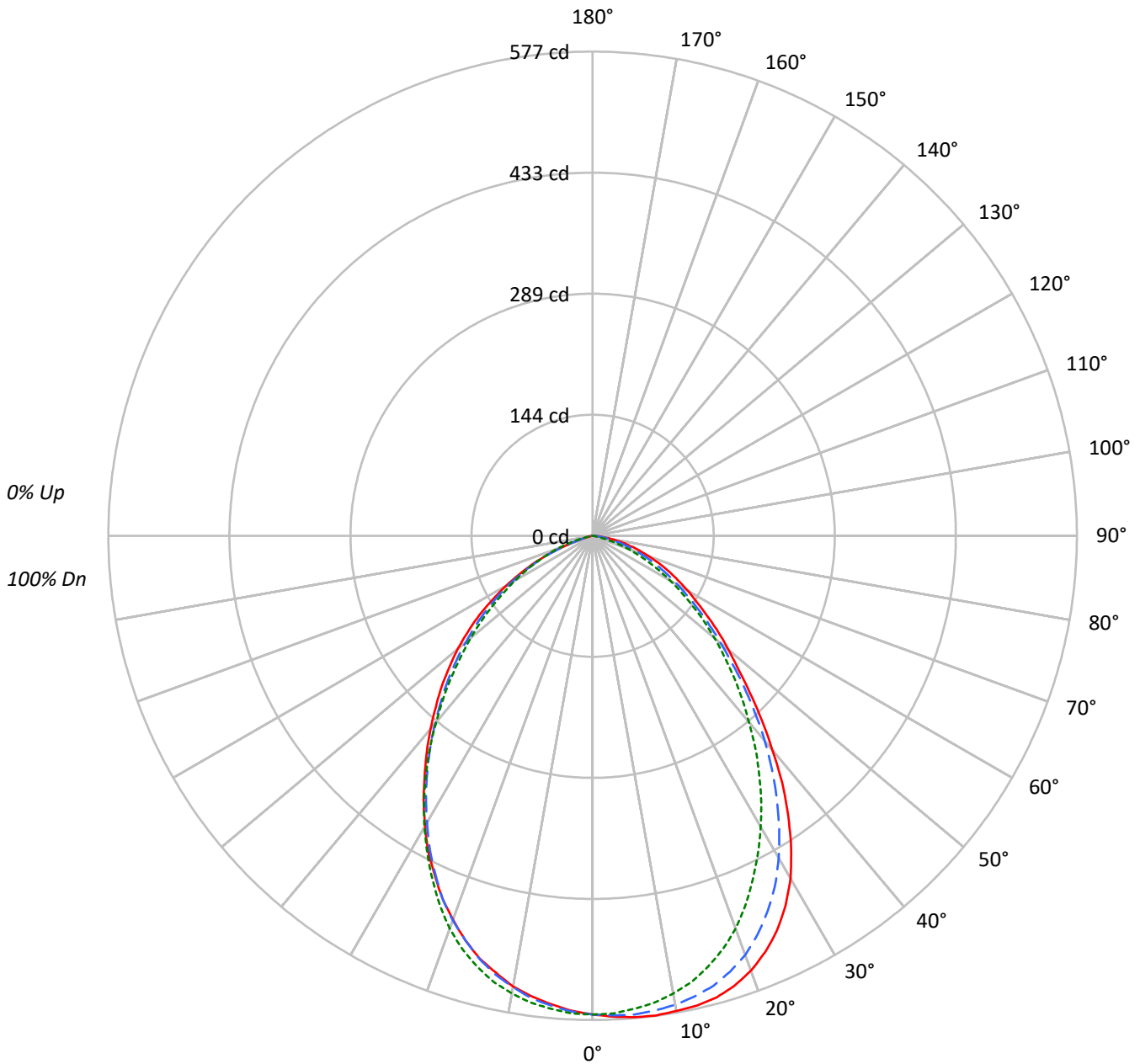
Input Watts (W): 9.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P593545

CATALOG NUMBER: HC810D010-HM80520950-81RWWC

### 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°	17592	17592	17592
5°	17826	17517	17353
10°	18004	17341	17074
15°	18187	16971	16636
20°	18098	16345	15971
25°	17676	15369	15161
30°	16789	14264	14214
35°	15284	13017	13130
40°	13397	11649	12080
45°	11556	10362	11099
50°	10122	9100	10050
55°	8967	7817	8849
60°	8079	6574	7333
65°	7282	5283	5611
70°	6383	3850	3092
75°	5445	1990	822
80°	4191	533	124
85°	2689	0	0



TEST NUMBER: P593545

CATALOG NUMBER: HC810D010-HM80520950-81RWWC

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	53.8	5.0
10°-20°	151.3	14.0
20°-30°	214.8	19.8
30°-40°	226.1	20.9
40°-50°	192.3	17.7
50°-60°	139.0	12.8
60°-70°	79.0	7.3
70°-80°	24.9	2.3
80°-90°	3.0	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°	419.9	38.7
0°-40°	646.0	59.6
0°-60°	977.3	90.1
0°-90°	1084.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1084.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	570	570	570	570	570	
5°	576	573	566	562	561	55
15°	570	555	532	522	521	160
25°	520	494	452	444	446	238
35°	406	382	346	344	349	253
45°	265	255	238	244	254	206
55°	167	155	145	154	165	150
65°	100	86	72	72	77	99
75°	46	35	17	8	7	49
85°	8	5	0	0	0	10
90°	0	0	0	0	0	



TEST NUMBER: P593545

CATALOG NUMBER: HC810D010-HM80520950-81RWWC

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5
2.5°	573.6	574.3	572.8	572.8	574.3	572.8	573.6	573.6	572.8	572.8	572.0
5°	575.9	575.0	575.0	575.0	575.9	574.3	573.6	574.3	572.8	572.8	572.8
7.5°	576.6	576.6	575.9	575.0	575.0	575.0	574.3	573.6	572.8	571.3	570.5
10°	575.0	575.0	575.9	574.3	574.3	572.8	572.8	571.3	571.3	569.7	567.5
12.5°	573.6	572.8	572.8	571.3	571.3	569.7	569.7	567.5	566.7	564.5	562.2
15°	569.7	569.0	567.5	566.7	565.9	565.2	563.6	562.9	560.6	557.6	555.3
17.5°	562.2	561.3	560.6	559.1	557.6	556.8	556.0	553.8	550.8	548.5	544.6
20°	551.5	550.8	550.8	548.5	547.6	545.3	544.6	541.6	539.3	534.8	531.6
22.5°	537.1	537.8	536.2	534.8	533.2	530.9	529.4	526.4	522.5	517.9	514.1
25°	519.5	520.2	518.8	517.2	514.9	513.4	511.8	507.2	503.5	498.1	493.5
27.5°	497.4	497.4	497.4	495.8	492.1	491.3	489.8	485.2	479.8	475.3	470.7
30°	471.5	470.7	470.7	468.4	467.0	463.9	461.6	457.8	454.0	448.7	443.3
32.5°	440.3	441.0	438.7	437.2	434.9	434.9	431.9	428.9	424.3	418.9	413.6
35°	406.0	406.8	405.2	404.5	400.6	399.9	399.2	395.3	392.3	388.5	382.4
37.5°	370.9	370.2	369.4	369.4	367.1	365.6	364.1	361.8	357.2	354.2	351.1
40°	332.8	332.8	332.8	332.1	331.4	329.8	329.1	327.5	324.5	321.4	319.1
42.5°	298.6	298.6	297.9	297.0	295.6	296.3	294.7	293.3	290.2	287.9	286.4
45°	265.0	265.0	265.0	265.9	264.3	262.0	262.0	260.5	259.0	257.5	255.2
47.5°	235.4	237.6	236.1	235.4	236.1	233.1	233.1	231.5	230.1	228.5	225.5
50°	211.0	211.0	211.0	209.5	208.7	208.7	206.4	204.9	204.1	202.7	199.5
52.5°	189.0	187.4	187.4	186.7	185.8	184.4	184.4	182.8	179.8	178.3	176.0
55°	166.8	166.8	166.0	165.3	164.6	163.7	163.0	160.7	159.1	156.9	154.6
57.5°	147.0	148.6	147.7	146.3	144.7	144.7	143.2	141.7	139.4	137.1	134.9
60°	131.0	130.3	130.3	129.5	128.0	127.2	126.5	124.2	121.9	119.6	117.3
62.5°	114.3	114.3	114.3	112.7	111.2	110.5	109.7	108.2	105.2	102.8	101.3
65°	99.8	99.0	98.2	97.5	96.8	95.2	94.5	92.9	90.6	88.3	86.1
67.5°	85.3	84.5	84.5	83.8	81.5	80.8	80.8	78.5	76.2	73.9	71.6
70°	70.8	70.8	70.8	69.4	68.5	67.8	67.1	65.5	63.2	60.9	58.7
72.5°	58.7	57.9	57.9	57.1	54.8	54.1	53.4	51.8	49.5	48.0	46.5
75°	45.7	45.7	45.0	44.2	43.4	42.7	41.9	40.4	38.1	35.8	35.1
77.5°	35.1	34.3	34.3	33.5	32.0	31.3	31.3	29.7	27.4	25.8	24.4
80°	23.6	24.4	23.6	22.8	22.1	21.3	20.6	19.8	18.3	16.7	15.3
82.5°	14.4	15.3	14.4	14.4	13.7	13.0	13.0	11.4	10.7	9.9	9.1
85°	7.6	7.6	7.6	7.6	6.9	6.9	6.9	6.1	5.3	4.6	4.6
87.5°	2.3	3.0	2.3	2.3	2.3	2.3	2.3	2.3	1.6	1.6	1.6
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: P593545

CATALOG NUMBER: HC810D010-HM80520950-81RWWC

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5
2.5°	572.8	572.0	571.3	571.3	571.3	571.3	571.3	570.5	569.7	569.7	569.7
5°	571.3	571.3	571.3	570.5	569.7	569.7	568.2	567.5	566.7	565.9	565.2
7.5°	569.7	568.2	567.5	566.7	565.9	565.9	564.5	562.9	562.9	561.3	559.9
10°	565.2	564.5	562.9	561.3	560.6	559.9	558.3	556.0	555.3	553.8	552.2
12.5°	559.9	558.3	556.8	553.8	553.0	552.2	549.2	546.9	545.3	544.6	540.8
15°	553.0	549.9	547.6	543.9	543.1	541.6	539.3	537.1	533.9	531.6	530.2
17.5°	540.8	537.8	533.9	530.2	528.6	528.6	524.8	521.8	517.9	516.4	513.4
20°	526.4	522.5	519.5	514.9	512.7	510.4	508.1	503.5	500.4	498.1	494.4
22.5°	509.5	504.2	500.4	495.8	492.1	489.8	486.0	482.1	478.4	476.1	473.0
25°	488.3	483.7	477.6	473.0	470.7	467.7	463.1	459.3	455.6	451.7	450.1
27.5°	464.7	458.6	453.3	447.9	445.6	443.3	438.0	433.4	430.3	426.6	425.0
30°	438.7	432.6	426.6	422.0	419.7	415.9	412.9	407.5	403.8	400.6	396.9
32.5°	409.0	404.5	399.2	392.3	390.8	387.8	383.2	380.9	376.2	373.9	370.9
35°	377.1	373.9	368.7	363.4	361.1	359.5	355.7	351.1	348.1	345.8	344.3
37.5°	346.5	342.8	337.4	333.7	332.1	329.8	325.3	323.0	320.0	318.4	315.4
40°	313.8	310.0	306.1	303.9	301.6	300.1	297.0	294.7	291.7	289.4	288.7
42.5°	281.9	279.6	276.5	273.5	272.7	270.4	268.9	266.6	264.3	263.6	261.3
45°	252.9	250.6	247.6	244.5	243.8	242.2	241.5	239.2	237.6	237.6	237.6
47.5°	223.9	221.6	218.6	217.1	217.8	214.8	214.8	214.1	212.5	212.5	213.2
50°	198.1	195.0	194.2	192.7	191.2	189.7	190.4	188.1	188.1	189.7	189.0
52.5°	173.7	170.6	169.8	168.3	167.6	167.6	166.8	166.8	166.0	166.8	166.8
55°	151.6	149.3	147.7	146.3	145.4	145.4	145.4	144.7	144.0	145.4	146.3
57.5°	131.7	131.0	129.5	127.2	126.5	125.7	124.9	124.9	124.9	124.9	125.7
60°	114.3	112.7	111.2	108.9	108.9	108.2	107.5	106.6	106.6	106.6	106.6
62.5°	99.0	96.8	94.5	92.9	92.2	91.4	90.6	89.1	89.1	89.1	89.1
65°	83.8	81.5	79.9	78.5	76.9	76.9	75.4	74.6	73.1	72.4	70.8
67.5°	69.4	67.8	66.2	63.9	63.2	62.5	60.9	60.2	57.9	57.1	56.4
70°	56.4	54.1	52.5	51.1	50.2	48.8	47.2	45.7	44.2	42.7	41.1
72.5°	44.2	41.9	40.4	38.8	37.4	37.4	35.1	33.5	31.3	29.7	27.4
75°	32.7	30.4	29.0	26.7	25.8	25.1	22.8	21.3	19.0	16.7	15.3
77.5°	22.1	20.6	19.0	16.7	15.3	15.3	13.0	11.4	9.9	7.6	6.9
80°	13.7	12.1	10.7	9.1	9.1	7.6	6.9	5.3	3.8	3.0	2.3
82.5°	7.6	6.9	6.1	4.6	4.6	3.8	3.0	2.3	1.6	0.7	0.7
85°	3.8	3.0	2.3	2.3	1.6	1.6	1.6	0.7	0.7	0.0	0.0
87.5°	1.6	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



TEST NUMBER: P593545

CATALOG NUMBER: HC810D010-HM80520950-81RWWC

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5
2.5°	569.0	569.0	568.2	568.2	568.2	567.5	568.2	567.5	567.5	567.5	568.2
5°	565.9	564.5	564.5	563.6	563.6	562.9	563.6	562.9	562.2	561.3	562.2
7.5°	559.9	558.3	557.6	556.8	556.8	556.8	556.0	555.3	556.0	553.8	555.3
10°	551.5	550.8	549.2	548.5	547.6	548.5	547.6	546.2	546.2	546.2	545.3
12.5°	540.8	539.3	538.5	537.8	536.2	536.2	537.1	535.5	535.5	533.9	533.9
15°	527.9	526.4	524.8	524.8	523.4	523.4	522.5	522.5	521.8	521.1	521.1
17.5°	511.8	509.5	508.1	508.8	508.1	507.2	507.2	505.8	505.0	505.8	505.8
20°	492.8	491.3	489.8	490.5	489.0	488.3	489.0	486.7	487.5	487.5	487.5
22.5°	471.5	470.7	468.4	468.4	467.0	466.1	467.0	467.0	467.7	467.0	467.0
25°	447.9	446.3	444.9	444.9	444.0	443.3	444.0	444.9	444.0	444.9	444.9
27.5°	422.7	420.5	420.5	418.9	418.9	419.7	418.9	419.7	420.5	420.5	422.0
30°	395.3	394.6	393.8	393.1	393.1	393.8	393.8	393.8	394.6	396.1	396.1
32.5°	369.4	367.9	366.4	366.4	367.9	367.1	367.9	367.9	369.4	369.4	370.9
35°	341.2	341.2	339.7	340.5	340.5	340.5	340.5	342.0	343.5	344.3	345.8
37.5°	315.4	313.1	313.8	313.8	314.6	313.8	316.1	316.1	317.7	317.7	319.1
40°	287.2	287.2	287.9	287.2	287.9	287.9	289.4	291.0	291.7	293.3	294.0
42.5°	260.5	262.0	260.5	261.3	262.0	262.8	263.6	264.3	267.3	268.9	271.2
45°	236.1	236.9	237.6	238.4	237.6	239.2	239.9	241.5	243.8	244.5	245.3
47.5°	212.5	213.2	214.1	214.8	214.8	216.4	217.1	218.6	220.1	220.9	221.6
50°	189.7	191.2	192.0	192.0	192.7	194.2	195.8	195.8	197.2	199.5	200.4
52.5°	169.1	169.1	170.6	171.4	172.1	172.1	174.4	175.3	176.0	177.5	179.0
55°	146.3	148.6	149.3	149.3	150.9	152.3	153.1	153.9	153.9	156.9	156.9
57.5°	126.5	127.2	128.7	128.7	128.7	131.0	131.0	132.6	133.3	134.0	135.6
60°	106.6	108.2	108.2	108.9	108.2	109.7	110.5	112.0	112.7	113.5	114.3
62.5°	88.3	88.3	89.1	89.1	89.1	89.1	90.6	90.6	92.2	92.9	93.6
65°	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8	71.6	71.6	73.1
67.5°	54.8	54.1	52.5	53.4	52.5	52.5	51.8	51.8	52.5	52.5	54.1
70°	39.7	38.8	37.4	37.4	36.5	35.8	35.1	34.3	33.5	33.5	33.5
72.5°	25.8	24.4	22.1	21.3	21.3	19.8	18.3	17.5	17.5	17.5	17.5
75°	13.0	11.4	9.9	9.1	9.1	7.6	8.4	7.6	7.6	7.6	7.6
77.5°	5.3	3.8	3.0	3.0	3.0	2.3	2.3	2.3	2.3	2.3	2.3
80°	1.6	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: P593545

CATALOG NUMBER: HC810D010-HM80520950-81RWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	570.5	570.5	570.5	570.5	570.5	570.5	570.5	570.5
2.5°	567.5	567.5	565.9	566.7	566.7	566.7	566.7	566.7
5°	560.6	561.3	560.6	561.3	561.3	560.6	560.6	560.6
7.5°	553.8	554.5	553.8	554.5	554.5	554.5	553.8	553.8
10°	545.3	545.3	545.3	545.3	545.3	544.6	545.3	545.3
12.5°	533.9	533.9	533.9	534.8	534.8	533.9	533.9	533.2
15°	521.8	520.2	521.1	521.8	521.1	521.1	521.1	521.1
17.5°	505.0	505.8	505.0	505.0	505.0	505.0	505.8	505.0
20°	487.5	487.5	488.3	487.5	487.5	487.5	487.5	486.7
22.5°	467.7	467.0	467.0	467.7	467.7	467.0	467.7	467.7
25°	445.6	446.3	445.6	445.6	446.3	446.3	446.3	445.6
27.5°	422.0	422.7	423.5	422.7	422.7	422.7	423.5	424.3
30°	397.6	399.2	397.6	397.6	399.2	398.3	399.2	399.2
32.5°	371.7	373.9	372.5	373.9	373.9	374.8	373.9	374.8
35°	345.8	348.1	348.1	348.1	348.8	349.7	349.7	348.8
37.5°	321.4	322.3	322.3	323.7	324.5	325.3	325.3	324.5
40°	296.3	297.9	298.6	298.6	298.6	300.1	301.6	300.1
42.5°	271.9	272.7	273.5	273.5	275.0	275.7	276.5	276.5
45°	248.3	249.9	250.6	251.3	252.2	253.6	252.9	254.5
47.5°	223.9	226.2	226.9	227.8	229.2	230.1	230.8	231.5
50°	201.8	203.4	203.4	204.9	207.2	207.2	208.7	209.5
52.5°	179.8	180.5	181.3	182.1	183.5	185.1	185.1	186.7
55°	158.4	159.1	159.1	160.0	160.7	163.7	164.6	164.6
57.5°	136.3	136.3	137.9	138.6	139.4	140.9	140.9	140.9
60°	115.0	115.8	115.8	116.6	117.3	118.9	119.6	118.9
62.5°	93.6	94.5	94.5	95.2	96.8	97.5	96.8	96.8
65°	73.9	74.6	74.6	75.4	76.9	76.9	76.2	76.9
67.5°	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1
70°	34.3	33.5	32.7	33.5	33.5	33.5	32.7	34.3
72.5°	16.7	17.5	17.5	17.5	17.5	17.5	17.5	16.7
75°	7.6	7.6	6.9	6.9	6.9	7.6	7.6	6.9
77.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
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)