

*Shotshell
Ballistics
For
7 1/2, 8, & 9 Shot
Maximum Distance, Angle,
And
Height of Travel*



Exterior Ballistics Calculator

Version 4.02 BETA VERSION

Shotshell Flat Trajectory

I. CARTRIDGE DATA

Shell Identification: 12-ga. 2¾ inch #7 1/2 Shot
Shot Weight: 1.1250 ounces
Shot Material: Lead - ½% Sb
Shot Density: 0.40464 lb/in³
Shot Diameter: 0.095 in.
Approximate Pellet Count: 387
Ballistic Coefficient: 0.019510 (Calculated)
Velocity over 3' @ 3': 1,200 fps
Drag Factor: G99

II. ENVIRONMENTAL DATA

Temperature: 59° F
Atmospheric pressure: 29.53 inches of Hg
Properties of air basis: SAAMI data and functions

III. CALCULATED LOAD PARAMETERS

Pellets Per Ounce: 344
Pellet Sectional Density: 0.02013 lb/sq. in.

IV. PREDICTED PERFORMANCE

Range (yards)	Remaining Velocity (feet/sec)	Pellet Energy (lb-feet)	Payload Energy (lb-ft)	Pellet Momentum (lb-ft/sec)	Pellet Energy Density (lb-ft/in²)	Flight Time (sec)	Drop (inches)	Wind Drift 10 mph Wind (inches)
1	1,200	4.07	1573.5	0.2180	573.5	0.0000	0.0	0.0
10	1,038	3.04	1178.1	0.1886	429.4	0.0241	-0.1	0.3
20	874	2.16	834.6	0.1588	304.2	0.0557	-0.5	1.4
30	742	1.56	601.9	0.1348	219.4	0.0930	-1.4	3.6
40	636	1.14	442.4	0.1156	161.2	0.1367	-3.0	6.9
50	549	0.85	329.4	0.0997	120.1	0.1876	-5.3	11.4
60	475	0.64	246.4	0.0863	89.8	0.2464	-8.9	17.4
70	410	0.48	184.1	0.0746	67.1	0.3144	-14.0	25.0
80	355	0.35	137.4	0.0644	50.1	0.3931	-21.2	34.4
90	306	0.26	102.4	0.0556	37.3	0.4842	-31.2	46.1
100	264	0.20	76.3	0.0480	27.8	0.5898	-44.9	60.2
110	228	0.15	56.8	0.0414	20.7	0.7121	-63.6	77.4
120	197	0.11	42.2	0.0357	15.4	0.8540	-89.0	97.9
130	169	0.08	31.3	0.0308	11.4	1.0186	-123.6	122.5
140	146	0.06	23.3	0.0265	8.5	1.2096	-170.3	151.7
150	125	0.04	17.2	0.0228	6.3	1.4315	-233.5	186.4
160	108	0.03	12.7	0.0196	4.6	1.6897	-319.0	227.4
170	92	0.02	9.3	0.0167	3.4	1.9910	-434.6	276.1
180	78	0.02	6.7	0.0142	2.4	2.3443	-591.6	333.8

Exterior Ballistics Calculator

Version 4.02 BETA VERSION

Shotshell Maximum Range - Iterative Solution

I. CARTRIDGE DATA

Shell Identification: 12-ga. 2¾ inch #7 1/2 Shot
Shot Weight: 1.1250 ounces
Shot Material: Lead - ½% Sb
Shot Density: 0.4046 lb./in³
Shot Diameter: 0.095 inches
Approximate Pellet Count: 387
Ballistic Coefficient: 0.019510 (Calculated)
Velocity over 3' @ 3': 1,200 fps
Drag Factor: G99

II. ENVIRONMENTAL DATA

	<u>At Firing Position</u>	<u>At Impact Area</u>
Temperature:	59° F	59° F
Atmospheric pressure:	29.53 in. Hg	29.53 in. Hg
Properties of air basis:	SAAMI data and functions	

III. CONSTRAINTS

Initial time: 0.0 seconds
Initial range: 0 feet
Gunsite Altitude: 0 feet above the impact area.

IV. PREDICTED IMPACT CONDITIONS

<u>Firing Angle</u> (°)	<u>Time of Flight</u> (sec)	<u>Horizontal Distance</u> (feet)	<u>Max. Elevation Achieved</u> (feet)	<u>Impact Velocity</u> (ft/sec)	<u>Impact Angle</u> (°)
5.00	2.2783	536	24	88	-21.29
6.00	2.5607	557	31	81	-26.12
7.00	2.8246	574	37	76	-30.77
8.00	3.0732	589	45	73	-35.19
9.00	3.3099	602	52	71	-39.33
10.00	3.5364	613	59	70	-43.18
11.00	3.7540	622	67	69	-46.72
12.00	3.9642	630	75	69	-49.98
13.00	4.1684	637	83	69	-52.97
14.00	4.3660	643	90	69	-55.68
15.00	4.5589	649	99	69	-58.15
16.00	4.7474	653	107	69	-60.42
17.00	4.9320	657	115	70	-62.50
18.00	5.1129	660	123	70	-64.40
19.00	5.2905	663	132	71	-66.15
20.00	5.4649	665	140	71	-67.73
21.00	5.6364	666	148	72	-69.20
22.00	5.8054	667	157	72	-70.54

Exterior Ballistics Calculator

Version 4.02 BETA VERSION

Shotshell Maximum Range - Iterative Solution

IV. PREDICTED IMPACT CONDITIONS (Continued)

Firing Angle (°)	Time of Flight (sec)	Horizontal Distance (feet)	Max. Elevation Achieved (feet)	Impact Velocity (ft/sec)	Impact Angle (°)
23.00	5.9720	668	165	73	-71.78
24.00	6.1363	668	174	73	-72.93
25.00	6.2984	667	182	74	-73.99
26.00	6.4584	667	191	74	-74.98
27.00	6.6165	665	200	74	-75.89
28.00	6.7728	664	208	75	-76.74

Exterior Ballistics Calculator

Version 4.02 BETA VERSION

Shotshell Maximum Range - Iterative Solution

I. CARTRIDGE DATA

Shell Identification: 12-ga. 2¾ inch #8 Shot
Shot Weight: 1.1250 ounces
Shot Material: Lead - ½% Sb
Shot Density: 0.4046 lb./in³
Shot Diameter: 0.090 inches
Approximate Pellet Count: 455
Ballistic Coefficient: 0.018513 (Calculated)
Velocity over 3' @ 3': 1,200 fps
Drag Factor: G99

II. ENVIRONMENTAL DATA

	<u>At Firing Position</u>	<u>At Impact Area</u>
Temperature:	59° F	59° F
Atmospheric pressure:	29.53 in. Hg	29.53 in. Hg
Properties of air basis:	SAAMI data and functions	

III. CONSTRAINTS

Initial time: 0.0 seconds
Initial range: 0 feet
Gunsite Altitude: 0 feet above the impact area.

IV. PREDICTED IMPACT CONDITIONS

Firing Angle (°)	Time of Flight (sec)	Horizontal Distance (feet)	Max. Elevation Achieved (feet)	Impact Velocity (ft/sec)	Impact Angle (°)
2.00	1.2218	411	7	140	-7.05
4.00	1.9387	491	17	95	-16.61
6.00	2.5164	536	30	79	-26.42
8.00	3.0185	567	43	71	-35.54
10.00	3.4720	589	57	68	-43.54
12.00	3.8917	606	72	67	-50.35
14.00	4.2851	618	87	67	-56.02
16.00	4.6594	627	103	68	-60.77
18.00	5.0175	634	119	69	-64.71
20.00	5.3627	638	135	70	-68.02
22.00	5.6969	641	151	71	-70.81
24.00	6.0216	641	168	71	-73.18
26.00	6.3378	640	184	72	-75.21
28.00	6.6462	637	200	73	-76.95
30.00	6.9480	632	217	74	-78.45

Exterior Ballistics Calculator

Version 4.02 BETA VERSION

Shotshell Maximum Range - Iterative Solution

I. CARTRIDGE DATA

Shell Identification: 12-ga. 2¾ inch #9 Shot
Shot Weight: 1.1250 ounces
Shot Material: Lead - ½% Sb
Shot Density: 0.4046 lb./in³
Shot Diameter: 0.080 inches
Approximate Pellet Count: 648
Ballistic Coefficient: 0.016510 (Calculated)
Velocity over 3' @ 3': 1,200 fps
Drag Factor: G99

II. ENVIRONMENTAL DATA

	<u>At Firing Position</u>	<u>At Impact Area</u>
Temperature:	59° F	59° F
Atmospheric pressure:	29.53 in. Hg	29.53 in. Hg
Properties of air basis:	SAAMI data and functions	

III. CONSTRAINTS

Initial time: 0.0 seconds
Initial range: 0 feet
Gunsite Altitude: 0 feet above the impact area.

IV. PREDICTED IMPACT CONDITIONS

<u>Firing Angle</u> <u>(°)</u>	<u>Time of Flight</u> <u>(sec)</u>	<u>Horizontal Distance</u> <u>(feet)</u>	<u>Max. Elevation Achieved</u> <u>(feet)</u>	<u>Impact Velocity</u> <u>(ft/sec)</u>	<u>Impact Angle</u> <u>(°)</u>
2.00	1.1831	382	6	131	-7.29
4.00	1.8706	453	16	89	-17.11
6.00	2.4229	494	28	74	-27.10
8.00	2.9036	521	40	67	-36.33
10.00	3.3371	541	53	65	-44.36
12.00	3.7389	556	67	64	-51.17
14.00	4.1153	567	81	64	-56.80
16.00	4.4733	575	95	64	-61.48
18.00	4.8165	580	110	65	-65.38
20.00	5.1474	584	125	66	-68.64
22.00	5.4680	586	140	67	-71.40
24.00	5.7794	586	155	68	-73.72
26.00	6.0829	584	170	68	-75.70
28.00	6.3797	582	185	69	-77.41
30.00	6.6694	578	200	70	-78.89

