

# RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); \* = not for revolvers; ◇ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; CLM = cartridge length longer than SAAMI max, may not fit in all magazines... \*Molycoat: molybdenum disulfide dry film lubricant

## Federal Premium Rifle

ATT.	USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN		BULLET STYLE	GOLD MEDAL PRIMER	BALLISTIC COEFFICIENT		VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)													
				GRAINS	GRAMS			G1	G7	MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.								
<b>FEDERAL PREMIUM BIG GAME</b>																							
◇	1, 2	P223TC1	<b>223 REM.</b>	55	3.56	TROPHY COPPER	X			3240	2915	2613	2330	2066	1819								
◇	2	P223S	<b>223 REM.</b>	55	3.56	BARNES TRIPLE-SHOCK X BULLET	X			3200	2738	2320	1940	1604	1323								
◇	2	P223Q	<b>223 REM.</b>	60	3.89	NOSLER PARTITION	X			3160	2737	2350	1998	1679	1403								
◇	1, 2	P223TT3	<b>223 REM.</b>	62	4.02	TROPHY BONDED TIP	X			3050	2680	2339	2024	1736	1480								
◇	2	P22250G	<b>22-250 REM.</b>	60	3.89	NOSLER PARTITION	X			3500	3043	2630	2253	1908	1601								
◇	2	P224VLKBTX1	<b>224 VALKYRIE</b>	78	5.05	BARNES TRIPLE-SHOCK X BULLET	X			2850	2611	2385	2170	1966	1774								
◇	2	P243TC1	<b>243 WIN.</b>	85	5.51	TROPHY COPPER	X			3200	2947	2708	2481	2265	2061								
◇	2	P243K	<b>243 WIN.</b>	85	5.51	BARNES TRIPLE-SHOCK X BULLET	X			3200	2904	2628	2367	2122	1891								
◇	2	P243A1	<b>243 WIN.</b>	90	5.83	NOSLER ACCUBOND	X	0.376	0.186	3100	2843	2600	2370	2152	1945								
◇	2	P243SS1	<b>243 WIN.</b>	90	5.83	SWIFT SCIROCCO II	X	0.419		3100	2869	2649	2440	2240	2050								
◇	2	P243BCH1	<b>243 WIN.</b>	95	6.16	BERGER HYBRID HUNTER	X	0.434	0.223	3050	2829	2619	2418	2226	2043								
◇	2	P243J	<b>243 WIN.</b>	95	6.16	NOSLER BALLISTIC TIP	X			3025	2774	2536	2310	2096	1893								
◇	2	P243C	<b>243 WIN.</b>	100	6.48	SIERRA GAMEKING BTSP	X			2960	2741	2533	2334	2145	1964								
◇	2	P243E	<b>243 WIN.</b>	100	6.48	NOSLER PARTITION	X			2850	2612	2386	2171	1968	1776								
◇	2	P2506H	<b>25-06 REM.</b>	100	6.48	BARNES TRIPLE-SHOCK X BULLET	X			3210	2916	2641	2382	2138	1908								
◇	2	P2506A1	<b>25-06 REM.</b>	110	7.13	NOSLER ACCUBOND	X			3100	2868	2648	2438	2238	2048								
◇	2	P2506TC1	<b>25-06 REM.</b>	100	6.48	TROPHY COPPER	X			3210	2967	2737	2519	2311	2113								
◇	2	P2506D	<b>25-06 REM.</b>	100	6.48	NOSLER BALLISTIC TIP	X			3220	2968	2729	2503	2288	2084								
◇	2	P2506E	<b>25-06 REM.</b>	115	7.45	NOSLER PARTITION	X			3030	2785	2553	2333	2124	1925								
◇	2	P2506C	<b>25-06 REM.</b>	117	7.58	SIERRA GAMEKING BTSP	X			3030	2797	2577	2366	2166	1975								
◇	2	P260B	<b>260 REM.</b>	120	7.78	NOSLER BALLISTIC TIP	X			2950	2725	2512	2308	2113	1928								
◇	2	P260A	<b>260 REM.</b>	140	9.07	SIERRA GAMEKING BTSP	X			2700	2487	2284	2090	1905	1733								
◇	2	P65CRDTC1	<b>6.5 CREEDMOOR</b>	120	7.78	TROPHY COPPER	X			2875	2689	2510	2338	2174	2015								
◇	2, 3	P65CRDTA1	<b>6.5 CREEDMOOR</b>	130	8.42	TERMINAL ASCENT	X	0.532	0.263	2800	2629	2464	2305	2152	2005								
◇	2	P65CRDBTSX1	<b>6.5 CREEDMOOR</b>	130	8.42	BARNES TRIPLE-SHOCK X BULLET	X			2825	2576	2341	2118	1906	1711								
◇	2	P65CRDSS1	<b>6.5 CREEDMOOR</b>	130	8.42	SWIFT SCIROCCO II	X	0.571		2800	2640	2486	2337	2193	2054								
◇	2	P65CRDBCH1	<b>6.5 CREEDMOOR</b>	135	8.75	BERGER HYBRID HUNTER	X	0.584	0.303	2775	2620	2469	2324	2184	2049								
◇	2	P65CRDA1	<b>6.5 CREEDMOOR</b>	140	9.07	NOSLER ACCUBOND	X	0.509	0.244	2675	2501	2334	2173	2018	1870								
◇	2, 3	P65PRCTA1	<b>6.5 PRC</b>	130	8.42	TERMINAL ASCENT	X	0.532	0.263	3000	2821	2649	2483	2324	2170								
◇	2	P270L	<b>270 WIN.</b>	130	8.42	BARNES TRIPLE-SHOCK X BULLET	X			3060	2804	2562	2333	2115	1909								
◇	2	P270BCH1	<b>270 WIN.</b>	140	9.07	BERGER HYBRID HUNTER	X	0.528	0.271	2950	2772	2600	2435	2276	2123								
◇	2	P270A1	<b>270 WIN.</b>	140	9.07	NOSLER ACCUBOND	X			2950	2760	2579	2404	2236	2075								
◇	2, 3	P270TA1	<b>270 WIN.</b>	136	8.81	TERMINAL ASCENT	X	0.493	0.247	3000	2807	2622	2445	2274	2111								
◇	2	P270D	<b>270 WIN.</b>	130	8.42	SIERRA GAMEKING BTSP	X			3060	2839	2630	2429	2238	2055								
◇	2	P270F	<b>270 WIN.</b>	130	8.42	NOSLER BALLISTIC TIP	X			3060	2837	2626	2424	2231	2046								
◇	2	P270P	<b>270 WIN.</b>	130	8.42	NOSLER PARTITION	X			3060	2829	2610	2401	2202	2012								
◇	2	P270TC1	<b>270 WIN.</b>	130	8.42	TROPHY COPPER	X			3060	2850	2650	2459	2275	2100								
◇	2	P270TT1	<b>270 WIN.</b>	130	8.42	TROPHY BONDED TIP	X			3060	2841	2633	2434	2244	2063								
◇	2	P270SS1	<b>270 WIN.</b>	130	8.42	SWIFT SCIROCCO II	X	0.450		3050	2837	2633	2439	2253	2075								
◇	2	P270TT3	<b>270 WIN.</b>	140	9.07	TROPHY BONDED TIP	X			2950	2744	2547	2358	2177	2004								
◇	2	P270E	<b>270 WIN.</b>	150	9.72	NOSLER PARTITION	X			2830	2634	2446	2266	2093	1928								
◇	2	P270C	<b>270 WIN.</b>	150	9.72	SIERRA GAMEKING BTSP	X			2830	2639	2457	2281	2113	1951								
◇	2	P270WSMA1	<b>270 WIN. SHORT MAGNUM</b>	130	8.42	NOSLER ACCUBOND	X			3250	3019	2800	2592	2392	2202								
◇	2	P270WSMD	<b>270 WIN. SHORT MAGNUM</b>	130	8.42	BARNES TRIPLE-SHOCK X BULLET	X			3280	3011	2758	2518	2291	2076								
◇	2	P270WSMB	<b>270 WIN. SHORT MAGNUM</b>	130	8.42	NOSLER BALLISTIC TIP	X			3300	3065	2843	2632	2430	2237								
◇	2	P270WSMTC1	<b>270 WIN. SHORT MAGNUM</b>	130	8.42	TROPHY COPPER	X			3280	3059	2850	2650	2458	2275								
◇	2	P270WSMTT1	<b>270 WIN. SHORT MAGNUM</b>	130	8.42	TROPHY BONDED TIP	X			3280	3050	2832	2624	2426	2236								
◇	2	P270WSMSS1	<b>270 WIN. SHORT MAGNUM</b>	130	8.42	SWIFT SCIROCCO II	X	0.450		3300	3074	2860	2655	2460	2273								
◇	2, 3	P270WSMTA1	<b>270 WIN. SHORT MAGNUM</b>	136	8.81	TERMINAL ASCENT	X	0.493	0.247	3240	3036	2842	2655	2477	2305								
◇	2	P270WSMBC1	<b>270 WIN. SHORT MAGNUM</b>	140	9.07	BERGER HYBRID HUNTER	X	0.528	0.271	3200	3011	2830	2657	2489	2328								
◇	2	P270WSMTT3	<b>270 WIN. SHORT MAGNUM</b>	140	9.07	TROPHY BONDED TIP	X			3200	2982	2774	2575	2385	2204								
◇	2	P270WSMC	<b>270 WIN. SHORT MAGNUM</b>	150	9.72	NOSLER PARTITION	X			3100	2891	2692	2502	2319	2145								
◇	2	P730A	<b>7-30 WATERS</b>	120	7.78	SIERRA GAMEKING BTSP-FN	X			2700	2297	1929	1603	1329	1128								
◇	2	P708A1	<b>7MM-08 REM.</b>	140	9.07	NOSLER ACCUBOND	X			2850	2660	2479	2304	2137	1976								
◇	2	P708C	<b>7MM-08 REM.</b>	140	9.07	BARNES TRIPLE-SHOCK X BULLET	X			2820	2589	2370	2162	1963	1777								
◇	2	P708A	<b>7MM-08 REM.</b>	140	9.07	NOSLER PARTITION	X			2800	2591	2392	2202	2020	1847								
◇	2	P708B	<b>7MM-08 REM.</b>	140	9.07	NOSLER BALLISTIC TIP	X			2800	2613	2433	2260	2094	1935								
◇	2	P708TC2	<b>7MM-08 REM.</b>	140	9.07	TROPHY COPPER	X			2800	2614	2435	2264	2100	1942								
◇	2	P708TT2	<b>7MM-08 REM.</b>	140	9.07	TROPHY BONDED TIP	X			2800	2589	2388	2196	2012	1838								
◇	2	P280TC2	<b>280 REM.</b>	140	9.07	TROPHY COPPER	X			2950	2758	2573	2396	2227	2064								
◇	2	P280TT2	<b>280 REM.</b>	140	9.07	TROPHY BONDED TIP	X			2950	2732	2524	2326	2136	1956								
◇	2	P280A	<b>280 REM.</b>	150	9.72	NOSLER PARTITION	X			2890	2687	2494	2308	2130	1960								
◇	2	P280AITC1	<b>280 ACKLEY IMPROVED</b>	140	9.07	TROPHY COPPER	X	0.489		3075	2877	2688	2506	2332	2165								
◇	3, 4	P280AITA1	<b>280 ACKLEY IMPROVED</b>	155	10.04	TERMINAL ASCENT	X	0.586	0.300	2930	2770	2615	2465	2321	2181								
◇	2	P280AIBCH1	<b>280 ACKLEY IMPROVED</b>	168	10.89	BERGER HYBRID HUNTER	X	0.566	0.290	2830	2668	2511	2360	2214	2073								
◇	2, 3	P28NTA1	<b>28 NOSLER</b>	155	10.04	TERMINAL ASCENT	X	0.586	0.300	3200	3029	2865	2707	2555	2407								
◇	2	P7R7G	<b>7MM REM. MAGNUM</b>	140	9.07	NOSLER PARTITION	X			3150	2924	2709	2504	2308	2122								
◇	2	P7RTC2	<b>7MM REM. MAGNUM</b>	140	9.07	TROPHY COPPER	X			3150	2949	2756	2572	2395	2226								
◇	2	P7RTT2	<b>7MM REM. MAGNUM</b>	140	9.07	TROPHY BONDED TIP	X			3150	2922	2705	2499	2301	2113								
◇	3	P7RTC3	<b>7MM REM. MAGNUM</b>	150	9.72	TROPHY COPPER	X			3025	2833	2649	2472	2302	2139								
◇	2	P7RH	<b>7MM REM. MAGNUM</b>	150	9.72	NOSLER BALLISTIC TIP	X			3025	2832	2647	2469	2298	2134								
◇	3	P7RD	<b>7MM REM. MAGNUM</b>	150	9.72	SIERRA GAMEKING BTSP	X			3110	2887	2675	2472	2279	2094								
◇	3	P7RSS1	<b>7MM REM. MAGNUM</b>	150	9.72	SWIFT SCIROCCO II	X	0.515		3050	2863	2684	2511	2345	2186								
◇	2, 3	P7RTA1	<b>7MM REM. MAGNUM</b>	155	10.04	TERMINAL ASCENT	X	0.586	0.300	3000	2837	2680	2528	2382	2240								

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

MUZZLE	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT 0 YARDS, SIGHTS 1.5 INCHES ABOVE BORE LINE.					TEST BARREL LENGTH INCHES					
											AVERAGE RANGE										
	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.		500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.
1282	1038	834	663	521	404	0.9	3.7	8.8	16.6	27.5	-0.3	⊕	-2.6	-10.3	0.4	1.3	⊕	-6.4	-19.3	-40.2	24
1250	915	657	460	314	214	1.3	5.8	14.1	27.7	47.5	-0.3	⊕	-3.2	-12.9	0.5	1.6	⊕	-8.1	-25.8	-57.5	24
1330	998	736	532	375	262	1.2	5.3	13.1	25.2	42.9	-0.2	⊕	-3.2	-12.7	0.5	1.6	⊕	-8.0	-24.8	-54.4	24
1281	989	753	564	415	302	1.2	4.9	11.9	22.8	38.4	-0.2	⊕	-3.3	-13.1	0.6	1.7	⊕	-8.1	-24.8	-53.3	24
1632	1234	922	676	485	341	1.1	4.7	11.3	21.6	36.9	-0.3	⊕	-2.3	-9.6	0.2	1.1	⊕	-6.2	-19.3	-42.4	24
1407	1181	985	815	669	545	0.9	3.4	8.2	15.2	24.9	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.3	-47.7	24
1933	1639	1384	1162	969	801	0.7	2.9	6.8	12.5	20.5	-0.3	⊕	-2.5	-9.8	0.3	1.3	⊕	-6.0	-17.6	-36.2	24
1933	1592	1303	1057	850	675	0.8	3.5	8.1	15.2	24.9	-0.3	⊕	-2.7	-10.3	0.4	1.3	⊕	-6.3	-19.0	-39.2	24
1920	1615	1351	1122	925	756	0.7	3.2	7.3	13.8	22.4	-0.3	⊕	-2.8	-10.8	0.4	1.4	⊕	-6.5	-19.3	-39.5	24
1920	1644	1402	1189	1003	840	0.6	2.8	6.5	12.1	19.7	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.5	-37.6	24
1962	1688	1446	1233	1045	880	0.6	2.8	6.4	11.9	19.3	-0.2	⊕	-2.9	-10.8	0.5	1.4	⊕	-6.5	-18.9	-38.4	24
1930	1623	1356	1126	927	756	0.8	3.2	7.6	14.2	23.0	-0.2	⊕	-3.0	-11.5	0.5	1.5	⊕	-6.9	-20.4	-41.6	24
1945	1669	1425	1210	1021	856	0.7	2.9	6.7	12.6	20.4	-0.2	⊕	-3.1	-11.7	0.6	1.6	⊕	-7.0	-20.4	-41.3	24
1803	1515	1264	1047	860	701	0.9	3.4	8.2	15.2	24.8	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.3	-47.6	24
2288	1888	1549	1260	1015	808	0.8	3.4	7.9	15	24.5	-0.3	⊕	-2.6	-10.2	0.4	1.3	⊕	-6.3	-18.8	-38.7	24
2347	2009	1713	1452	1224	1024	0.6	2.8	6.5	12.1	19.8	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.5	-37.7	24
2288	1955	1664	1409	1185	991	0.7	2.7	6.4	11.8	19.3	-0.3	⊕	-2.5	-9.6	0.3	1.2	⊕	-5.9	-17.2	-35.2	24
2302	1955	1654	1391	1162	964	0.7	2.8	6.6	12.3	20.1	-0.3	⊕	-2.5	-9.6	0.3	1.2	⊕	-5.9	-17.3	-35.5	24
2344	1981	1665	1390	1152	946	0.7	3.1	7.3	13.7	22.2	-0.2	⊕	-3.0	-11.3	0.5	1.5	⊕	-6.8	-20.1	-40.9	24
2385	2033	1725	1454	1219	1014	0.7	3.0	6.9	12.8	20.9	-0.2	⊕	-3.0	-11.1	0.5	1.5	⊕	-6.7	-19.7	-40.0	24
2319	1979	1681	1419	1190	990	0.7	3.0	7.0	13.1	21.2	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.1	-20.8	-42.1	24
2266	1922	1621	1358	1128	934	0.8	3.4	8.1	14.8	24.4	-0.1	⊕	-4.1	-15.0	0.9	2.1	⊕	-8.8	-25.3	-51.9	24
2202	1926	1679	1457	1259	1082	0.7	2.6	6.0	11.1	17.9	-0.2	⊕	-3.3	-12.1	0.6	1.7	⊕	-7.1	-20.8	-41.6	24
2263	1995	1752	1533	1337	1160	0.7	2.5	5.8	10.7	17.2	-0.2	⊕	-3.5	-12.8	0.7	1.8	⊕	-7.5	-21.6	-43.1	24
2303	1916	1581	1294	1049	845	0.9	3.7	8.8	16.2	26.9	-0.2	⊕	-3.7	-13.9	0.8	1.9	⊕	-8.3	-24.2	-50	24
2263	2012	1784	1576	1388	1218	0.6	2.4	5.3	9.9	15.9	-0.2	⊕	-3.5	-12.5	0.7	1.7	⊕	-7.3	-21.1	-42.1	24
2308	2057	1828	1619	1430	1258	0.6	2.3	5.3	9.8	15.7	-0.1	⊕	-3.6	-12.8	0.7	1.8	⊕	-7.5	-21.5	-42.7	24
2224	1944	1693	1467	1266	1086	0.6	2.7	6.5	11.9	19.2	-0.1	⊕	-4.1	-14.6	0.9	2.0	⊕	-8.5	-24.3	-48.4	24
2598	2297	2025	1780	1558	1359	0.5	2.3	5.3	9.6	15.6	-0.2	⊕	-2.9	-10.7	0.5	1.5	⊕	-6.4	-18.4	-36.9	24
2703	2269	1895	1571	1292	1052	0.7	3.2	7.5	14.1	23	-0.2	⊕	-2.9	-11.2	0.5	1.5	⊕	-6.7	-20	-40.8	24
2705	2388	2102	1843	1610	1401	0.6	2.4	5.4	9.9	16.2	-0.2	⊕	-3.1	-11.2	0.5	1.5	⊕	-6.6	-19.1	-38.5	24
2705	2368	2067	1796	1554	1338	0.6	2.5	5.8	10.7	17.4	-0.2	⊕	-3.1	-11.3	0.6	1.5	⊕	-6.7	-19.5	-39.3	24
2718	2379	2076	1805	1562	1345	0.6	2.5	5.7	10.5	17.1	-0.2	⊕	-2.9	-10.9	0.5	1.5	⊕	-6.5	-18.8	-38	24
2703	2327	1996	1703	1445	1219	0.6	2.7	6.3	11.7	19.1	-0.3	⊕	-2.8	-10.7	0.5	1.4	⊕	-6.4	-18.8	-38.1	24
2703	2324	1990	1695	1436	1209	0.6	2.8	6.4	11.9	19.4	-0.3	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.8	-38.2	24
2703	2310	1966	1664	1399	1168	0.7	2.9	6.6	12.4	20.2	-0.2	⊕	-2.9	-10.8	0.5	1.4	⊕	-6.5	-19.1	-38.8	24
2703	2345	2027	1745	1494	1273	0.6	2.6	6.0	11.0	18.0	-0.3	⊕	-2.8	-10.5	0.4	1.4	⊕	-6.3	-18.4	-37.3	24
2703	2330	2001	1711	1454	1228	0.6	2.7	6.3	11.6	18.9	-0.3	⊕	-2.8	-10.6	0.5	1.4	⊕	-6.4	-18.7	-38.0	24
2685	2322	2001	1717	1465	1242	0.6	2.7	6.1	11.4	18.5	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.7	-37.9	24
2705	2340	2016	1728	1473	1249	0.7	2.8	6.3	11.9	19.2	-0.2	⊕	-3.1	-11.6	0.6	1.6	⊕	-6.9	-20.1	-40.6	24
2667	2310	1992	1709	1459	1238	0.7	2.8	6.6	12.3	19.7	-0.2	⊕	-3.5	-12.8	0.7	1.7	⊕	-7.6	-22.0	-44.1	24
2667	2320	2010	1733	1487	1268	0.7	2.7	6.4	11.9	19.1	-0.2	⊕	-3.5	-12.7	0.7	1.7	⊕	-7.5	-21.8	-43.7	24
3049	2631	2263	1939	1652	1400	0.6	2.5	5.9	10.8	17.6	-0.3	⊕	-2.3	-9.1	0.3	1.2	⊕	-5.6	-16.3	-33.3	24
3105	2616	2195	1830	1515	1244	0.7	2.9	6.9	12.7	20.9	-0.3	⊕	-2.3	-9.3	0.3	1.2	⊕	-5.8	-17	-34.9	24
3143	2712	2333	1999	1704	1444	0.6	2.5	5.8	10.6	17.3	-0.3	⊕	-2.2	-8.7	0.2	1.1	⊕	-5.4	-15.8	-32.2	24
3105	2702	2344	2026	1744	1494	0.6	2.3	5.5	10.1	16.3	-0.3	⊕	-2.2	-8.7	0.2	1.1	⊕	-5.4	-15.8	-31.9	24
3105	2685	2315	1988	1699	1443	0.6	2.4	5.8	10.5	17.1	-0.3	⊕	-2.2	-8.8	0.2	1.1	⊕	-5.5	-16.0	-32.4	24
3143	2728	2360	2035	1746	1491	0.6	2.4	5.6	10.2	16.5	-0.3	⊕	-2.2	-8.6	0.2	1.1	⊕	-5.4	-15.6	-31.7	24
3170	2783	2438	2129	1852	1604	0.5	2.2	5.2	9.4	15.2	-0.3	⊕	-2.3	-8.9	0.3	1.1	⊕	-5.5	-15.9	-31.9	24
3183	2818	2490	2194	1926	1685	0.5	2.1	4.9	8.9	14.3	-0.3	⊕	-2.3	-9.0	0.3	1.2	⊕	-5.6	-16	-32	24
3183	2763	2391	2062	1768	1509	0.6	2.4	5.7	10.4	17.1	-0.3	⊕	-2.4	-9.4	0.3	1.2	⊕	-5.8	-16.7	-33.8	24
3200	2784	2414	2085	1792	1532	0.6	2.5	5.8	10.6	17.4	-0.3	⊕	-2.7	-10.1	0.4	1.3	⊕	-6.1	-17.8	-36.0	24
1942	1405	991	685	471	339	1.6	7.1	17.7	34.4	58.1	-0.1	⊕	-5.1	-19.9	1.2	2.6	⊕	-12.2	-38.1	-84.5	24
2525	2200	1910	1650	1419	1214	0.7	2.7	6.2	11.6	18.7	-0.2	⊕	-3.4	-12.5	0.7	1.7	⊕	-7.3	-21.4	-42.9	24
2472	2084	1746	1452	1198	982	0.9	3.4	8.1	14.9	24.4	-0.2	⊕	-3.7	-13.6	0.8	1.8	⊕	-8.1	-23.6	-48.1	24
2437	2088	1779	1507	1269	1061	0.8	3.1	7.3	13.4	21.8	-0.1	⊕	-3.6	-13.5	0.8	1.8	⊕	-8.0	-23.1	-46.6	24
2437	2122	1839	1587	1363	1164	0.7	2.7	6.4	11.9	19.1	-0.2	⊕	-3.6	-13.1	0.7	1.8	⊕	-7.7	-22.3	-44.5	24
2437	2124	1844	1593	1370	1172	0.7	2.7	6.4	11.8	18.9	-0.2	⊕	-3.6	-13.0	0.7	1.8	⊕	-7.7	-22.2	-44.4	24
2437	2084	1772	1498	1258	1050	0.8	3.1	7.4	13.6	22.1	-0.1	⊕	-3.7	-13.5	0.8	1.8	⊕	-8.0	-23.2	-46.8	24
2705	2364	2059	1785	1541	1324	0.6	2.6	5.9	10.9	17.7	-0.2	⊕	-3.1	-11.4	0.6	1.5	⊕	-6.7	-19.6	-39.5	24
2705	2320	1980	1681	1419	1189	0.7	2.9	6.8	12.7	20.5	-0.2	⊕	-3.2	-11.8	0.6	1.6	⊕	-7.0	-20.6	-41.6	24
2782	2405	2071	1774	1511	1279	0.7	2.9	6.5	12.2	19.6	-0.2	⊕	-3.3	-12.2	0						

# RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◇ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; CLM = cartridge length longer than SAAMI max, may not fit in all magazines.. \*Molycoat: molybdenum disulfide dry film lubricant

## Federal Premium Rifle

ATT.	USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN		BULLET STYLE	GOLD MEDAL PRIMER	BALLISTIC COEFFICIENT		VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)					
				GRAINS	GRAINS			G1	G7	MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
◇	3	P7WBTT1	<b>7MM WEATHERBY MAGNUM</b>	160	10.37	TROPHY BONDED TIP	X			3100	2913	2733	2561	2394	2235
◇	2	P3030TC1	<b>30-30 WIN.</b>	150	9.72	TROPHY COPPER	X			2300	1943	1625	1354	1150	1021
◇	2	P3030G	<b>30-30 WIN.</b>	150	9.72	BARNES TRIPLE-SHOCK X BULLET	X			2220	1803	1447	1178	1017	919
◇	2	P3030D	<b>30-30 WIN.</b>	170	11.02	NOSLER PARTITION	X			2200	1894	1619	1380	1191	1060
◇	2	P308F	<b>308 WIN.</b>	150	9.72	NOSLER BALLISTIC TIP	X			2820	2611	2410	2219	2037	1863
◇	2	P308S	<b>308 WIN.</b>	150	9.72	NOSLER PARTITION	X			2840	2604	2380	2168	1966	1776
◇	2	P308V	<b>308 WIN.</b>	150	9.72	BARNES TRIPLE-SHOCK X BULLET	X			2820	2574	2341	2120	1911	1717
◇	2	P308TC3	<b>308 WIN.</b>	150	9.72	TROPHY COPPER	X			2820	2625	2439	2260	2089	1925
◇	2	P308A1	<b>308 WIN.</b>	165	10.69	NOSLER ACCUBOND	X			2700	2513	2333	2161	1997	1838
◇	2	P308TC2	<b>308 WIN.</b>	165	10.69	TROPHY COPPER	X			2700	2510	2329	2155	1988	1829
◇	2	P308C	<b>308 WIN.</b>	165	10.69	SIERRA GAMEKING BTSP	X			2700	2481	2272	2073	1884	1708
◇	2	P308TT2	<b>308 WIN.</b>	165	10.69	TROPHY BONDED TIP	X			2700	2503	2314	2133	1960	1797
◇	3	P308H	<b>308 WIN.</b>	165	10.69	BARNES TRIPLE-SHOCK X BULLET	X			2650	2430	2220	2021	1833	1659
◇	2	P308SS1	<b>308 WIN.</b>	165	10.69	SWIFT SCIROCCO II	X	0.470		2700	2511	2329	2156	1990	1830
◇	2	P308BCHI	<b>308 WIN.</b>	168	10.89	BERGER HYBRID HUNTER	X	0.489	0.251	2700	2518	2343	2176	2015	1860
◇	2 3	P308TA1	<b>308 WIN.</b>	175	11.34	TERMINAL ASCENT	X	0.520	0.258	2600	2432	2271	2116	1967	1824
◇	3	P308E	<b>308 WIN.</b>	180	11.66	NOSLER PARTITION	X			2570	2388	2213	2045	1885	1734
◇	2	P308TT1	<b>308 WIN.</b>	180	11.66	TROPHY BONDED TIP	X			2620	2445	2277	2116	1960	1812
◇	2	P3006A3	<b>30-06 SPRING.</b>	150	9.72	NOSLER ACCUBOND	X			2910	2696	2493	2298	2112	1934
◇	2	P3006G	<b>30-06 SPRING.</b>	150	9.72	SIERRA GAMEKING BTSP	X			2910	2666	2435	2216	2008	1812
◇	2	P3006P	<b>30-06 SPRING.</b>	150	9.72	NOSLER BALLISTIC TIP	X			2910	2696	2492	2296	2110	1932
◇	2	P3006A2	<b>30-06 SPRING.</b>	165	10.69	NOSLER ACCUBOND	X			2800	2609	2425	2249	2081	1919
◇	2	P3006Q	<b>30-06 SPRING.</b>	165	10.69	NOSLER BALLISTIC TIP	X			2800	2609	2425	2249	2081	1919
◇	2	P3006TC2	<b>30-06 SPRING.</b>	165	10.69	TROPHY COPPER	X			2800	2619	2445	2278	2118	1963
◇	2	P3006TT2	<b>30-06 SPRING.</b>	165	10.69	TROPHY BONDED TIP	X			2800	2598	2405	2221	2044	1875
◇	2	P3006AD	<b>30-06 SPRING.</b>	165	10.69	NOSLER PARTITION	X			2830	2607	2395	2193	2000	1818
◇	2	P3006D	<b>30-06 SPRING.</b>	165	10.69	SIERRA GAMEKING BTSP	X			2800	2576	2362	2159	1966	1784
◇	2	P3006AF	<b>30-06 SPRING.</b>	165	10.69	BARNES TRIPLE-SHOCK X BULLET	X			2800	2573	2356	2151	1955	1771
◇	2	P3006SS1	<b>30-06 SPRING.</b>	165	10.69	SWIFT SCIROCCO II	X	0.470		2800	2607	2421	2244	2074	1910
◇	2	P3006BCHI	<b>30-06 SPRING.</b>	168	10.89	BERGER HYBRID HUNTER	X	0.489	0.251	2800	2614	2435	2264	2100	1942
◇	2 3	P3006TA1	<b>30-06 SPRING.</b>	175	11.34	TERMINAL ASCENT	X	0.520	0.258	2730	2558	2391	2232	2078	1930
◇	3	P3006A1	<b>30-06 SPRING.</b>	180	11.66	NOSLER ACCUBOND	X			2700	2524	2355	2193	2037	1887
◇	3	P3006F	<b>30-06 SPRING.</b>	180	11.66	NOSLER PARTITION	X			2700	2512	2332	2160	1995	1837
◇	2	P3006TT1	<b>30-06 SPRING.</b>	180	11.66	TROPHY BONDED TIP	X			2700	2522	2351	2186	2029	1877
◇	3	P3006TC1	<b>30-06 SPRING.</b>	180	11.66	TROPHY COPPER	X			2700	2530	2366	2208	2056	1910
◇	3	P3006AE	<b>30-06 SPRING.</b>	180	11.66	BARNES TRIPLE-SHOCK X BULLET	X			2700	2504	2316	2137	1965	1802
◇	3	P3006T5	<b>30-06 SPRING.</b>	200	12.96	TROPHY BONDED BEAR CLAW	X			2540	2324	2118	1922	1740	1571
◇	2	P300WR	<b>300 WIN. MAGNUM</b>	165	10.69	BARNES TRIPLE-SHOCK X BULLET	X			3050	2810	2582	2365	2159	1963
◇	2	P300WK	<b>300 WIN. MAGNUM</b>	165	10.69	NOSLER PARTITION	X			3050	2816	2594	2382	2180	1989
◇	2	P300WTT2	<b>300 WIN. MAGNUM</b>	165	10.69	TROPHY BONDED TIP	X			3050	2837	2633	2439	2253	2075
◇	2	P300WTC2	<b>300 WIN. MAGNUM</b>	165	10.69	TROPHY COPPER	X			3050	2859	2675	2499	2330	2167
◇	3	P300WA1	<b>300 WIN. MAGNUM</b>	180	11.66	NOSLER ACCUBOND	X			2960	2774	2595	2424	2259	2100
◇	3	P300WTT1	<b>300 WIN. MAGNUM</b>	180	11.66	TROPHY BONDED TIP	X			2960	2771	2591	2417	2250	2089
◇	3	P300WTC1	<b>300 WIN. MAGNUM</b>	180	11.66	TROPHY COPPER	X			2960	2780	2606	2439	2279	2124
◇	3	P300WD2	<b>300 WIN. MAGNUM</b>	180	11.66	NOSLER PARTITION	X			2960	2701	2456	2224	2005	1799
◇	3	P300WP	<b>300 WIN. MAGNUM</b>	180	11.66	BARNES TRIPLE-SHOCK X BULLET	X			2960	2752	2554	2364	2182	2009
◇	2 3	P300WSS1	<b>300 WIN. MAGNUM</b>	180	11.66	SWIFT SCIROCCO II	X	0.520		2950	2769	2595	2428	2266	2112
◇	2	P300WBC1	<b>300 WIN. MAGNUM</b>	185	11.99	BERGER HYBRID HUNTER	X	0.533	0.273	2950	2773	2603	2440	2282	2130
◇	3	P300WT1	<b>300 WIN. MAGNUM</b>	200	12.96	TROPHY BONDED BEAR CLAW	X			2700	2476	2263	2060	1868	1689
◇	2 3	P300WTA1	<b>300 WIN. MAGNUM</b>	200	12.96	TERMINAL ASCENT	X	0.608	0.304	2810	2660	2514	2373	2236	2105
◇	2	P300WSMD	<b>300 WIN. SHORT MAGNUM</b>	150	9.72	NOSLER BALLISTIC TIP	X			3250	3019	2800	2592	2392	2202
◇	2	P300WSME	<b>300 WIN. SHORT MAGNUM</b>	165	10.69	NOSLER PARTITION	X			3120	2883	2659	2445	2241	2047
◇	3	P300WSMTT2	<b>300 WIN. SHORT MAGNUM</b>	165	10.69	TROPHY BONDED TIP	X			3130	2913	2706	2508	2319	2138
◇	2	P300WSMTC2	<b>300 WIN. SHORT MAGNUM</b>	165	10.69	TROPHY COPPER	X			3120	2926	2739	2561	2389	2224
◇	2	P300WSMG	<b>300 WIN. SHORT MAGNUM</b>	165	10.69	BARNES TRIPLE-SHOCK X BULLET	X			3130	2885	2653	2433	2224	2024
◇	3	P300WSMA1	<b>300 WIN. SHORT MAGNUM</b>	180	11.66	NOSLER ACCUBOND	X			2960	2774	2595	2424	2259	2100
◇	3	P300WSMTT1	<b>300 WIN. SHORT MAGNUM</b>	180	11.66	TROPHY BONDED TIP	X			2960	2771	2591	2417	2250	2089
◇	3	P300WSMB	<b>300 WIN. SHORT MAGNUM</b>	180	11.66	NOSLER PARTITION	X			2980	2780	2589	2406	2231	2063
◇	3	P300WSMTC1	<b>300 WIN. SHORT MAGNUM</b>	180	11.66	TROPHY COPPER	X			2960	2780	2606	2439	2279	2124
◇	3	P300WSMF	<b>300 WIN. SHORT MAGNUM</b>	180	11.66	BARNES TRIPLE-SHOCK X BULLET	X			2980	2771	2572	2381	2199	2025
◇	2 3	P300WSMS1	<b>300 WIN. SHORT MAGNUM</b>	180	11.66	SWIFT SCIROCCO II	X	0.520		2960	2779	2604	2436	2275	2120
◇	2	P300WSMBC1	<b>300 WIN. SHORT MAGNUM</b>	185	11.99	BERGER HYBRID HUNTER	X	0.533	0.273	2950	2773	2603	2440	2282	2130
◇	2 3	P300WSMTA1	<b>300 WIN. SHORT MAGNUM</b>	200	12.96	TERMINAL ASCENT	X	0.608	0.304	2810	2660	2514	2373	2236	2105
◇	2	P300RUMA1	<b>300 REM. ULTRA MAGNUM</b>	180	11.66	NOSLER ACCUBOND	X			3100	2908	2724	2548	2378	2214
◇	3	P338FTC2	<b>338 FEDERAL</b>	200	12.96	TROPHY COPPER	X			2630	2424	2228	2041	1863	1697
◇	3	P338FTT2	<b>338 FEDERAL</b>	200	12.96	TROPHY BONDED TIP	X			2630	2431	2241	2060	1887	1725
◇	2, 3	P338TT2	<b>338 WIN. MAGNUM</b>	200	12.96	TROPHY BONDED TIP	X			2930	2718	2515	2321	2137	1960
◇	3	P338A2	<b>338 WIN. MAGNUM</b>	210	13.61	NOSLER PARTITION	X			2830	2601	2383	2176	1980	1794
◇	3	P338T1	<b>338 WIN. MAGNUM</b>	225	14.58	TROPHY BONDED BEAR CLAW	X			2730	2490	2263	2047	1844	1656
◇	3	P338TC1	<b>338 WIN. MAGNUM</b>	225	14.58	TROPHY COPPER	X			2800	2611	2429	2255	2087	1927
◇	3	P338B2	<b>338 WIN. MAGNUM</b>	250	16.2	NOSLER PARTITION	X			2660	2474	2295	2124	1960	1803
◇	3	P338A1	<b>338 WIN. MAGNUM</b>	225	14.58	NOSLER ACCUBOND	X			2800	2634	2475	2320	2172	2028
◇	3	P338LMA1	<b>338 LAPUA MAGNUM</b>	300	19.44	NOSLER ACCUBOND	X	0.720		2650	2527	2407	2291	2178	2068
◇	3	P338LTC1	<b>338 LAPUA MAGNUM</b>	250	16.2	TROPHY COPPER	X			2850	2702	2559	2420	2286	2156
◇	3	P35WT1	<b>35 WHELEN</b>	225	14.58	TROPHY BONDED BEAR CLAW	X			2600	2351	2116	1895	1690	1503
◇	3	P375T4	<b>375 H&amp;H MAGNUM</b>	250	16.2	TROPHY BONDED BEAR CLAW	X			2670	2412	2169	1940	1728	1534
◇	4	P375F	<b>375 H&amp;H MAGNUM</b>	300	19.44	NOSLER PARTITION	X			2440	2230	2031	1841	1666	1504
◇	3	P4570T4	<b>45-70 GOVERNMENT</b>	300	19.44	TROPHY BONDED BEAR CLAW	X			1850	1612	1401	1227	1099	1011
<b>FEDERAL PREMIUM HAMMERDOWN™</b>															
◇	2	LG327F1	<b>327 FEDERAL MAGNUM</b>	127	8.23	HOLLOW POINT	X	0.195		1650	1341	1120	990	905	838
◇	2	LG45C1	<b>45 COLT</b>	250	16.2	HOLLOW POINT	X	0.165		1400	1125	975	881	808	746
◇	2	LG30301	<b>30-30 WIN.</b>	150	9.72	BONDED SOFT POINT	X			2390	2086	1805	1553	1337	1167
◇	2	LG3571	<b>357 MAGNUM</b>	170	11.02	BONDED SOFT POINT	X			1610	1296	1084	963	881	815
◇	2	LG41	<b>44 REM. MAGNUM</b>	270	17.5	BONDED SOFT POINT	X			1715	1390	1150	1006	916	846
◇	2	LG45701	<b>45-70 GOVERNMENT</b>	300	19.44	BONDED SOFT POINT	X	0.290							

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

MUZZLE	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					WIND DRIFT IN INCHES TO MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT 0 YARDS, SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH INCHES
	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	AVERAGE RANGE					LONG RANGE					
	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	
3414	3014	2653	2329	2036	1774	0.5	2.2	5.2	9.4	15.2	-0.3	⊕	-2.6	-9.9	0.4	1.3	⊕	-6.0	-17.2	-34.6	24
1762	1258	880	611	441	347	2.0	8.9	21.5	41.0	67.0	0.2	⊕	-7.9	-29.0	2.2	3.9	⊕	-17.2	-53.8	-117.0	24
1641	1083	697	462	344	281	2.6	11.5	28.4	53.2	84.2	0.3	⊕	-9.4	-35.8	2.7	4.7	⊕	-21.7	-68.6	-147.8	24
1827	1354	990	719	535	424	1.8	8.1	19.4	36.7	59.9	0.3	⊕	-8.4	-30.0	2.4	4.2	⊕	-17.4	-53.5	-114.4	24
2648	2270	1935	1640	1382	1156	0.8	3.0	7.2	13.3	21.5	-0.2	⊕	-3.6	-13.2	0.7	1.8	⊕	-7.8	-22.7	-45.8	24
2686	2259	1887	1565	1287	1050	0.9	3.4	8.2	15.1	24.7	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.4	-47.8	24
2648	2207	1825	1497	1217	982	0.9	3.6	8.7	16.0	26.6	-0.2	⊕	-3.7	-13.9	0.8	1.9	⊕	-8.3	-24.2	-49.9	24
2648	2296	1981	1701	1453	1234	0.7	2.8	6.6	12.2	19.7	-0.2	⊕	-3.5	-12.9	0.7	1.8	⊕	-7.6	-22.2	-44.4	24
2671	2313	1994	1711	1460	1238	0.7	2.9	7.0	12.9	20.6	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.5	-24.4	-48.7	24
2671	2309	1986	1701	1448	1225	0.7	2.9	7.1	13.0	20.9	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.5	-24.5	-49.0	24
2671	2254	1891	1575	1301	1069	0.8	3.5	8.3	15.3	25.4	-0.1	⊕	-4.2	-15.1	0.9	2.1	⊕	-8.9	-25.6	-52.7	24
2671	2294	1961	1667	1408	1182	0.7	3.1	7.4	13.6	22.1	-0.1	⊕	-4.1	-14.7	0.9	2.0	⊕	-8.6	-24.7	-49.9	24
2573	2163	1806	1497	1231	1008	0.8	3.7	8.7	16	26.7	-0.1	⊕	-4.4	-15.9	1.0	2.2	⊕	-9.3	-26.9	-55.4	24
2671	2310	1988	1702	1450	1227	0.7	2.9	7	13	20.9	-0.1	⊕	-4	-14.5	0.9	2	⊕	-8.5	-24.5	-48.9	24
2719	2365	2048	1766	1514	1291	0.7	2.8	6.7	12.3	19.9	-0.1	⊕	-4	-14.4	0.9	2.0	⊕	-8.4	-24.1	-48.1	24
2627	2299	2004	1740	1503	1292	0.6	2.8	6.7	12.1	19.6	-0.1	⊕	-4.4	-15.6	1	2.2	⊕	-9	-25.6	-51.2	24
2640	2278	1957	1672	1420	1202	0.7	3.2	7.5	13.6	22.5	-0.1	⊕	-4.7	-16.4	1.1	2.3	⊕	-9.4	-26.9	-54.7	24
2743	2389	2072	1789	1536	1313	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.3	-15.4	1.0	2.2	⊕	-8.9	-25.5	-51.1	24
2820	2421	2069	1758	1485	1246	0.7	3.0	6.8	12.8	20.6	-0.2	⊕	-3.3	-12.2	0.6	1.6	⊕	-7.2	-21.1	-42.6	24
2820	2368	1975	1635	1343	1093	0.9	3.4	8.0	14.9	24.3	-0.2	⊕	-3.4	-12.7	0.7	1.7	⊕	-7.6	-22.3	-45.5	24
2820	2420	2068	1756	1483	1243	0.7	3.0	6.9	12.8	20.6	-0.2	⊕	-3.3	-12.2	0.6	1.6	⊕	-7.2	-21.1	-42.6	24
2872	2493	2155	1853	1586	1349	0.7	2.8	6.6	12.2	19.6	-0.2	⊕	-3.6	-13.1	0.7	1.8	⊕	-7.8	-22.4	-44.9	24
2872	2493	2155	1853	1586	1349	0.7	2.8	6.6	12.2	19.6	-0.2	⊕	-3.6	-13.1	0.7	1.8	⊕	-7.8	-22.4	-44.9	24
2872	2513	2190	1901	1643	1412	0.7	2.6	6.2	11.4	18.4	-0.2	⊕	-3.5	-12.9	0.7	1.8	⊕	-7.6	-22.0	-44.0	24
2872	2473	2119	1806	1531	1288	0.8	2.9	7.0	12.9	20.9	-0.2	⊕	-3.6	-13.3	0.8	1.8	⊕	-7.9	-22.8	-45.8	24
2934	2490	2101	1761	1465	1210	0.8	3.2	7.7	14.2	23.1	-0.2	⊕	-3.6	-13.3	0.7	1.8	⊕	-7.9	-23.0	-46.8	24
2872	2431	2044	1708	1416	1166	0.8	3.3	7.9	14.6	23.9	-0.1	⊕	-3.7	-13.8	0.8	1.9	⊕	-8.2	-23.7	-48.3	24
2872	2425	2034	1694	1400	1149	0.9	3.4	8.1	14.9	24.4	-0.1	⊕	-3.7	-13.8	0.8	1.9	⊕	-8.2	-23.8	-48.7	24
2872	2489	2148	1844	1575	1337	0.7	2.8	6.7	12.3	19.8	-0.2	⊕	-3.6	-13.2	0.7	1.8	⊕	-7.8	-22.5	-45	24
2924	2549	2212	1912	1644	1406	0.7	2.7	6.4	11.8	18.9	-0.2	⊕	-3.6	-13.0	0.7	1.8	⊕	-7.7	-22.2	-44.4	24
2896	2542	2222	1935	1678	1447	0.7	2.6	6.2	11.4	18.2	-0.1	⊕	-3.8	-13.7	0.8	1.9	⊕	-8.1	-23.1	-45.9	24
2913	2547	2217	1922	1658	1423	0.7	2.7	6.5	11.9	19.0	-0.1	⊕	-3.9	-14.2	0.9	2.0	⊕	-8.3	-23.8	-47.4	24
2913	2523	2174	1865	1591	1348	0.7	2.9	7.0	12.9	20.7	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.5	-24.4	-48.7	24
2913	2542	2208	1911	1644	1408	0.7	2.7	6.6	12.0	19.4	-0.1	⊕	-3.9	-14.3	0.9	2.0	⊕	-8.4	-23.9	-47.7	24
2913	2557	2236	1948	1689	1457	0.6	2.6	6.2	11.5	18.4	-0.1	⊕	-3.9	-14.1	0.9	2.0	⊕	-8.3	-23.6	-46.9	24
2913	2506	2144	1824	1543	1297	0.7	3.1	7.3	13.5	21.9	-0.1	⊕	-4.0	-14.7	0.9	2.0	⊕	-8.6	-24.7	-49.7	24
2865	2397	1992	1641	1344	1096	0.9	4.0	9.2	17.4	28.7	0.0	⊕	-5.0	-17.6	1.2	2.5	⊕	-10.1	-29.9	-61.3	24
3408	2892	2442	2049	1707	1411	0.7	3.0	7.0	13.2	21.4	-0.2	⊕	-2.9	-11.0	0.5	1.5	⊕	-6.6	-19.6	-39.9	24
3408	2905	2464	2078	1742	1449	0.7	3.0	6.8	12.8	20.8	-0.2	⊕	-2.9	-10.9	0.5	1.5	⊕	-6.6	-19.4	-39.5	24
3408	2948	2540	2179	1859	1577	0.6	2.7	6.1	11.4	18.5	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.7	-37.9	24
3408	2994	2622	2289	1989	1721	0.5	2.4	5.5	10.0	16.3	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.0	-36.3	24
3502	3075	2692	2348	2039	1763	0.6	2.5	5.6	10.4	16.8	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.6	-19.2	-38.7	24
3502	3070	2682	2334	2023	1745	0.6	2.5	5.7	10.5	17.1	-0.2	⊕	-3.1	-11.2	0.5	1.5	⊕	-6.6	-19.3	-38.9	24
3502	3088	2715	2378	2075	1803	0.6	2.4	5.4	10.0	16.3	-0.2	⊕	-3.0	-11.1	0.5	1.5	⊕	-6.6	-19.0	-38.3	24
3502	2915	2411	1978	1607	1294	0.9	3.5	8.3	15.4	25.3	-0.2	⊕	-3.3	-12.3	0.6	1.6	⊕	-7.4	-21.9	-45.0	24
3502	3027	2607	2233	1904	1612	0.7	2.8	6.3	11.8	19.2	-0.2	⊕	-3.1	-11.5	0.6	1.6	⊕	-6.8	-20	-40.4	24
3478	3064	2691	2355	2053	1782	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3.1	-11.2	0.6	1.5	⊕	-6.6	-19.2	-38.7	24
3575	3159	2784	2445	2139	1864	0.6	2.4	5.3	9.8	16	-0.2	⊕	-3	-11.2	0.5	1.5	⊕	-6.6	-19.1	-38.3	24
3237	2722	2273	1884	1549	1267	0.9	3.6	8.5	15.7	26.1	-0.1	⊕	-4.2	-15.2	0.9	2.1	⊕	-8.9	-25.9	-53.3	24
3506	3141	2806	2500	2221	1967	0.6	2.2	4.9	9.1	14.8	-0.2	⊕	-3.4	-12.3	0.7	1.7	⊕	-7.2	-20.6	-41.1	24
3518	3036	2611	2237	1906	1615	0.6	2.5	5.9	10.8	17.6	-0.3	⊕	-2.3	-9.1	0.3	1.2	⊕	-5.6	-16.3	-33.3	24
3566	3045	2590	2190	1840	1536	0.6	2.8	6.6	12.2	20.0	-0.3	⊕	-2.7	-10.3	0.4	1.4	⊕	-6.2	-18.3	-37.4	24
3589	3108	2682	2305	1970	1675	0.6	2.6	5.9	10.9	17.9	-0.3	⊕	-2.6	-10.0	0.4	1.3	⊕	-6.0	-17.6	-35.7	24
3566	3135	2749	2403	2091	1813	0.5	2.3	5.3	9.6	15.7	-0.3	⊕	-2.6	-9.8	0.4	1.3	⊕	-5.9	-17.1	-34.5	24
3589	3049	2579	2169	1811	1501	0.7	2.9	6.8	12.7	20.7	-0.3	⊕	-2.7	-10.3	0.4	1.4	⊕	-6.3	-18.4	-37.7	24
3502	3075	2692	2348	2039	1763	0.6	2.5	5.6	10.4	16.8	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.6	-19.2	-38.7	24
3502	3070	2682	2334	2023	1745	0.6	2.5	5.7	10.5	17.1	-0.2	⊕	-3.1	-11.2	0.5	1.5	⊕	-6.6	-19.3	-38.9	24
3549	3089	2680	2314	1989	1700	0.6	2.6	6.0	11.1	18.0	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.6	-19.4	-39.1	24
3502	3088	2715	2378	2075	1803	0.6	2.4	5.4	10.0	16.3	-0.2	⊕	-3.0	-11.1	0.5	1.5	⊕	-6.6	-19.0	-38.3	24
3549	3069	2644	2266	1933	1638	0.6	2.7	6.3	11.7	19	-0.2	⊕	-3.1	-11.3	0.5	1.5	⊕	-6.7	-19.7	-39.8	24
3502	3085	2710	2372	2068	1796	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3	-11.1	0.5	1.5	⊕	-6.6	-19.1	-38.	

# RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◇ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; CLM = cartridge length longer than SAAMI max, may not fit in all magazines.. \*Molycoat: molybdenum disulfide dry film lubricant

## Federal Premium Rifle

ATT.	USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN		BULLET STYLE	GOLD MEDAL PRIMER	BALLISTIC COEFFICIENT		VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)					
				GRAINS	GRAMS			G1	G7	MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
◇	4	P9374WH	<b>9.3X74 R</b>	286	18.53	WOODLEIGH HYDRO	X			2360	2049	1763	1509	1295	1133
◇	4	P370SA	<b>370 SAKO MAGNUM</b>	286	18.53	SWIFT A-FRAME	X			2550	2328	2117	1916	1730	1557
◇	4	P370WH	<b>370 SAKO MAGNUM</b>	286	18.53	WOODLEIGH HYDRO	X			2450	2132	1839	1576	1349	1172
◇	4	P375SA	<b>375 H&amp;H MAGNUM</b>	300	19.44	SWIFT A-FRAME	X			2450	2194	1953	1730	1527	1349
◇	4	P375T1	<b>375 H&amp;H MAGNUM</b>	300	19.44	TROPHY BONDED BEAR CLAW	X			2400	2159	1932	1721	1529	1359
◇	4	P375T2	<b>375 H&amp;H MAGNUM</b>	300	19.44	TROPHY BONDED SLEDGEHAMMER SOLID	X			2440	2115	1815	1548	1321	1147
◇	4	P375WH	<b>375 H&amp;H MAGNUM</b>	300	19.44	WOODLEIGH HYDRO	X			2500	2179	1881	1614	1380	1195
◇	4	P416SA	<b>416 RIGBY</b>	400	25.92	SWIFT A-FRAME	X			2350	2128	1917	1722	1542	1381
◇	4	P416T1	<b>416 RIGBY</b>	400	25.92	TROPHY BONDED BEAR CLAW	X			2300	2084	1880	1691	1517	1362
◇	4	P416T2	<b>416 RIGBY</b>	400	25.92	TROPHY BONDED SLEDGEHAMMER SOLID	X			2370	2073	1798	1551	1339	1171
◇	4	P416WH	<b>416 RIGBY</b>	400	25.92	WOODLEIGH HYDRO	X			2400	2086	1797	1539	1319	1149
◇	4	P416RSA	<b>416 REM. MAGNUM</b>	400	25.92	SWIFT A-FRAME	X			2400	2175	1962	1763	1580	1413
◇	4	P416RT1	<b>416 REM. MAGNUM</b>	400	25.92	TROPHY BONDED BEAR CLAW	X			2400	2179	1969	1772	1591	1426
◇	4	P416RT2	<b>416 REM. MAGNUM</b>	400	25.92	TROPHY BONDED SLEDGEHAMMER SOLID	X			2400	2100	1823	1574	1357	1185
◇	4	P416RWH	<b>416 REM. MAGNUM</b>	400	25.92	WOODLEIGH HYDRO	X			2400	2086	1797	1539	1319	1149
◇	4	P458T1	<b>458 WIN. MAGNUM</b>	400	25.92	TROPHY BONDED BEAR CLAW	X			2250	2025	1813	1619	1442	1290
◇	4	P458T2	<b>458 WIN. MAGNUM</b>	500	32.4	TROPHY BONDED BEAR CLAW	X			2090	1822	1580	1369	1198	1076
◇	4	P458T3	<b>458 WIN. MAGNUM</b>	500	32.4	TROPHY BONDED SLEDGEHAMMER SOLID	X			1950	1729	1528	1352	1205	1096
◇	4	P458WH	<b>458 WIN. MAGNUM</b>	500	32.4	WOODLEIGH HYDRO	X			2050	1764	1510	1296	1133	1025
◇	4	P458SA	<b>458 WIN. MAGNUM</b>	500	32.4	SWIFT A-FRAME	X			2090	1878	1683	1503	1345	1212
◇	4	P458LT1	<b>458 LOTT</b>	500	32.4	TROPHY BONDED BEAR CLAW	X			2300	2016	1755	1520	1319	1161
◇	4	P458LT2	<b>458 LOTT</b>	500	32.4	TROPHY BONDED SLEDGEHAMMER SOLID	X			2300	2055	1825	1616	1427	1267
◇	4	P458LWH	<b>458 LOTT</b>	500	32.4	WOODLEIGH HYDRO	X			2250	1947	1672	1430	1232	1090
◇	4	P470SA	<b>470 NITRO EXPRESS</b>	500	32.4	SWIFT A-FRAME	X			2150	1936	1738	1555	1391	1251
◇	4	P470T1	<b>470 NITRO EXPRESS</b>	500	32.4	TROPHY BONDED BEAR CLAW	X			2150	1892	1657	1445	1268	1131
◇	4	P470T2	<b>470 NITRO EXPRESS</b>	500	32.4	TROPHY BONDED SLEDGEHAMMER SOLID	X			2150	1875	1627	1406	1226	1094
◇	4	P470WH	<b>470 NITRO EXPRESS</b>	500	32.4	WOODLEIGH HYDRO	X			2150	1855	1591	1361	1180	1056
◇	4	P500NSA	<b>500 NITRO EXPRESS</b>	570	36.94	SWIFT A-FRAME	X			2100	1851	1625	1422	1252	1122
◇	4	P500NWH	<b>500 NITRO EXPRESS</b>	570	36.94	WOODLEIGH HYDRO	X			2100	1809	1550	1328	1156	1040
<b>FEDERAL PREMIUM VARMINT &amp; PREDATOR</b>															
◇	1	P204B	<b>204 RUGER</b>	32	2.07	NOSLER BALLISTIC TIP	X			4030	3465	2968	2523	2119	1755
◇	1	P204C	<b>204 RUGER</b>	40	2.59	NOSLER BALLISTIC TIP	X			3650	3200	2793	2421	2079	1766
◇	1	P22D	<b>22 HORNET</b>	30	1.94	SPEER TNT GREEN	X			3150	2154	1387	990	828	715
◇	1	P222C	<b>222 REM.</b>	40	2.59	NOSLER BALLISTIC TIP	X			3450	2987	2569	2187	1839	1533
◇	1	P222D	<b>222 REM.</b>	43	2.79	SPEER TNT GREEN	X			3400	2745	2176	1683	1290	1048
◇	1	P223P	<b>223 REM.</b>	40	2.59	NOSLER BALLISTIC TIP	X			3700	3209	2770	2371	2007	1679
◇	1	P223R	<b>223 REM.</b>	43	2.79	SPEER TNT GREEN	X			3600	2915	2325	1809	1385	1098
◇	1	P223F	<b>223 REM.</b>	55	3.56	NOSLER BALLISTIC TIP	X			3240	2870	2528	2212	1918	1653
◇	1	P224VLKBT1	<b>224 VALKYRIE</b>	60	3.89	NOSLER BALLISTIC TIP	X			3300	2930	2589	2273	1979	1710
◇	1	P22250D	<b>22-250 REM.</b>	43	2.79	SPEER TNT GREEN	X			4000	3252	2618	2065	1590	1224
◇	1	P22250F	<b>22-250 REM.</b>	55	3.56	NOSLER BALLISTIC TIP	X			3670	3263	2892	2550	2233	1939
◇	1	P243H	<b>243 WIN.</b>	55	3.56	NOSLER BALLISTIC TIP	X			3850	3438	3064	2721	2402	2105
◇	1	P243F	<b>243 WIN.</b>	70	4.54	NOSLER BALLISTIC TIP	X			3450	3113	2802	2511	2238	1983
◇	1	P2506G	<b>25-06 REM.</b>	85	5.51	NOSLER BALLISTIC TIP	X			3550	3226	2925	2643	2379	2130
<b>FEDERAL PREMIUM GOLD MEDAL®</b>															
5		GM223M	<b>223 REM.</b>	69	4.47	SIERRA MATCHKING BTHP	X	0.301	0.165	2950	2642	2353	2084	1832	1604
5		GM223BH73	<b>223 REM.</b>	73	4.73	BERGER BT TARGET	X	0.348	0.178	2800	2541	2296	2065	1847	1648
5		GM223M3	<b>223 REM.</b>	77	4.99	SIERRA MATCHKING BTHP	X	0.372	0.188	2720	2481	2255	2041	1838	1652
5		GM224VLKBH2	<b>224 VALKYRIE</b>	80.5	5.22	BERGER BT TARGET	X	0.441	0.226	2925	2713	2512	2318	2134	1958
5		GM224VLK1	<b>224 VALKYRIE</b>	90	5.83	SIERRA MATCHKING BTHP	X	0.563	0.274	2700	2542	2388	2241	2098	1961
5		GM6CRDBH1	<b>6MM CREEDMOOR</b>	105	6.8	BERGER HYBRID	X	0.536	0.275	3025	2846	2674	2509	2350	2196
5		GM6CRDM1	<b>6MM CREEDMOOR</b>	107	6.93	SIERRA MATCHKING BTHP	X	0.547	0.271	3000	2826	2658	2497	2341	2191
5		GM65GDLBH130	<b>6.5 GRENDL</b>	130	8.42	BERGER AR HYBRID OTM	X	0.560	0.287	2400	2251	2108	1969	1836	1711
5		GM65CRDBH130	<b>6.5 CREEDMOOR</b>	130	8.42	BERGER HYBRID OTM	X	0.560	0.287	2825	2661	2503	2351	2204	2062
5		GM65CRD1	<b>6.5 CREEDMOOR</b>	140	9.07	SIERRA MATCHKING BTHP	X	0.535	0.261	2675	2509	2350	2196	2048	1905
5		GM65PRCBH1	<b>6.5 PRC</b>	140	9.07	BERGER HYBRID	X	0.607	0.311	2925	2770	2621	2476	2336	2201
5		GM308M	<b>308 WIN.</b>	168	10.89	SIERRA MATCHKING BTHP	X	0.462	0.224	2650	2460	2277	2103	1936	1778
5		GM308M2	<b>308 WIN.</b>	175	11.34	SIERRA MATCHKING BTHP	X	0.505	0.250	2600	2427	2262	2102	1949	1803
5		GM308BH185	<b>308 WIN.</b>	185	11.99	BERGER JUGGERNAUT OTM	X	0.552	0.283	2600	2442	2289	2143	2001	1864
5		GM3006M	<b>30-06 SPRING.</b>	168	10.89	SIERRA MATCHKING BTHP	X	0.463	0.224	2700	2508	2324	2148	1980	1819
5		GM300WM	<b>300 WIN. MAGNUM</b>	190	12.31	SIERRA MATCHKING BTHP	X	0.533	0.275	2900	2725	2557	2395	2239	2089
5		GM300WMBH1	<b>300 WIN. MAGNUM</b>	215	13.93	BERGER HYBRID	X	0.691	0.354	2825	2692	2563	2437	2315	2196
5		GM300NMBH1	<b>300 NORMA MAG</b>	215	13.93	BERGER HYBRID	X	0.691	0.354	2925	2789	2657	2528	2404	2283
5		GM338LM	<b>338 LAPUA MAG</b>	250	16.2	SIERRA MATCHKING BTHP	X	0.587	0.318	2950	2789	2634	2484	2339	2199
5		GM338LM2	<b>338 LAPUA MAG</b>	300	19.44	SIERRA MATCHKING BTHP	X	0.768	0.387	2580	2466	2355	2248	2143	2040

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

MUZZLE	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					WIND DRIFT IN INCHES TO MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT 0 YARDS, SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH INCHES
	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	AVERAGE RANGE					LONG RANGE					
											50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	
3537	2666	1974	1446	1065	815	1.7	7.1	17.1	32.6	53.9	0.1	⊕	-6.8	-24.9	1.9	3.4	⊕	-14.7	-45.0	-96.5	24
4129	3440	2845	2331	1899	1540	0.9	4.1	9.4	17.9	29.4	0.0	⊕	-5.0	-17.6	1.2	2.5	⊕	-10.1	-30.0	-61.5	24
3812	2887	2147	1578	1156	872	1.6	6.6	16.2	30.9	51.5	0.1	⊕	-6.1	-22.8	1.6	3.1	⊕	-13.6	-41.3	-88.7	24
3998	3206	2541	1994	1553	1213	1.3	5.2	12.4	23.3	38.6	0.1	⊕	-5.4	-20.7	1.5	2.9	⊕	-12.3	-35.8	-74.8	24
3837	3105	2486	1974	1557	1230	1.3	5.0	12.1	22.6	37.3	⊕	-0.2	-6.3	-21.9	0.1	⊕	-5.9	-21.3	-48.5	-90.7	24
3966	2978	2194	1597	1163	877	1.7	6.9	16.9	32.2	53.6	0.1	⊕	-6.3	-23.4	1.7	3.1	⊕	-13.9	-42.6	-91.6	24
4163	3161	2357	1735	1269	951	1.5	6.4	15.8	30.0	50.1	0.1	⊕	-5.8	-21.7	1.5	2.9	⊕	-13.0	-39.4	-84.6	24
4905	4021	3264	2633	2111	1693	1.2	4.7	11.5	21.5	35.2	⊕	-0.3	-6.6	-22.6	0.1	⊕	-6.1	-21.9	-49.4	-91.6	24
4698	3859	3139	2540	2043	1647	1.2	4.8	11.6	21.6	35.4	0.2	⊕	-6.4	-23.0	1.8	3.2	⊕	-12.3	-38.6	-79.3	24
4988	3815	2870	2137	1591	1217	1.6	6.6	16.1	30.5	50.5	0.1	⊕	-6.6	-24.2	1.8	3.3	⊕	-14.3	-43.1	-91.8	24
5115	3865	2867	2103	1545	1173	1.7	6.8	16.7	31.9	52.8	0.1	⊕	-6.5	-24.0	1.7	3.2	⊕	-14.2	-43.4	-92.9	24
5115	4202	3419	2760	2216	1774	1.2	4.7	11.1	20.9	34.1	⊕	-0.2	-6.2	-21.3	0.1	⊕	-5.8	-20.8	-47.1	-87.1	24
5115	4215	3443	2789	2248	1806	1.2	4.6	10.9	20.5	33.4	0.1	⊕	-5.8	-20.6	1.5	2.9	⊕	-11.9	-35.1	-71.8	24
5115	3918	2951	2200	1636	1246	1.6	6.5	15.8	29.9	49.7	0.1	⊕	-6.4	-23.5	1.7	3.2	⊕	-13.9	-41.9	-89.2	24
5115	3865	2867	2103	1545	1173	1.7	6.8	16.7	31.9	52.8	0.1	⊕	-6.5	-24.0	1.7	3.2	⊕	-14.2	-43.4	-92.9	24
4496	3641	2919	2327	1846	1478	1.3	5.3	12.9	23.8	39.2	0.2	⊕	-7.0	-24.8	1.9	3.5	⊕	-14.3	-41.6	-86.3	24
4849	3684	2773	2080	1594	1285	1.7	7.7	18.3	34.4	55.8	0.4	⊕	-9.2	-32.2	2.7	4.6	⊕	-18.5	-55.8	-117.6	24
4221	3320	2593	2028	1613	1333	1.8	7.2	16.9	31.2	50.2	0.6	⊕	-10.2	-35.3	3.1	5.1	⊕	-20.1	-59.2	-122.6	24
4665	3455	2530	1864	1425	1167	2.0	8.6	20.7	38.7	62.0	0.5	⊕	-9.8	-35.0	2.9	4.9	⊕	-20.4	-61.6	-129.9	24
4849	3916	3144	2508	2009	1631	1.2	5.9	13.7	25.7	41.8	⊕	-0.7	-9.9	-31.1	0.3	⊕	-8.5	-29.2	-65.5	-121.1	24
5873	4514	3419	2566	1933	1496	1.6	6.7	16.1	30.5	50.3	0.2	⊕	-7.1	-25.6	2.0	3.6	⊕	-14.9	-42.9	-95.7	24
5873	4689	3699	2900	2260	1782	1.4	5.6	13.6	25.2	41.7	0.2	⊕	-6.7	-24.1	1.8	3.3	⊕	-14.1	-41.2	-86.0	24
5620	4209	3105	2269	1686	1320	1.7	7.6	18.2	34.7	56.9	0.2	⊕	-7.8	-28.0	2.2	3.9	⊕	-16.3	-50.0	-107.0	24
5132	4163	3353	2685	2148	1736	1.2	5.5	13.2	24.4	39.9	⊕	-0.6	-9.0	-29.0	0.3	⊕	-7.9	-27.3	-61.0	-113.0	24
5132	3973	3047	2318	1784	1419	1.5	7.0	16.4	31.0	50.6	0.3	⊕	-8.4	-29.3	2.4	4.2	⊕	-16.7	-50.5	-106.1	24
5132	3902	2937	2195	1669	1329	1.6	7.5	17.8	33.5	54.7	0.3	⊕	-8.6	-30.2	2.5	4.3	⊕	-17.3	-52.6	-111.3	24
5132	3819	2809	2057	1546	1238	1.8	8.1	19.4	36.7	59.6	0.3	⊕	-8.8	-31.3	2.5	4.4	⊕	-18.1	-55.4	-117.8	24
5581	4336	3342	2559	1985	1594	1.5	7.0	16.5	31.0	50.5	⊕	-0.7	-10.2	-32.8	0.3	⊕	-8.8	-30.7	-70.1	-131.9	24
5581	4143	3041	2232	1691	1369	1.8	8.4	20.1	37.7	60.8	0.4	⊕	-9.3	-33.1	2.7	4.6	⊕	-19.2	-58.3	-123.7	24
1154	853	626	452	319	219	1	4.4	10.6	20.4	34.6	-0.4	⊕	-1.4	-6.8	-0.1	0.7	⊕	-4.7	-14.9	-33.1	24
1183	909	693	520	384	277	1	4.2	10.0	19.1	32.2	-0.4	⊕	-1.9	-8.3	0.1	1.0	⊕	-5.4	-16.9	-36.5	24
661	309	128	65	46	34	3.5	17.5	46.9	88.9	140.9	-0.1	⊕	-6.6	-32.7	1.5	3.3	⊕	-22.8	-78.7	-179.7	24
1057	792	586	425	300	209	1.2	4.9	11.9	22.8	39.1	-0.3	⊕	-2.4	-10.2	0.3	1.2	⊕	-6.5	-20.4	-45.0	24
1104	719	452	270	159	105	1.8	7.9	20.0	40.4	70.7	-0.3	⊕	-3.2	-14.0	0.5	1.6	⊕	-9.2	-31.4	-75.9	24
1216	915	682	499	358	250	1.1	4.5	10.8	20.8	35.3	-0.4	⊕	-1.9	-8.3	0.1	0.9	⊕	-5.5	-17.3	-38.1	24
1237	811	516	313	183	115	1.6	7.2	18.3	37.1	65.6	-0.3	⊕	-2.7	-11.9	0.3	1.3	⊕	-7.9	-27.1	-65.9	16
1282	1006	781	597	449	333	1.0	4.3	10.4	19.6	33.2	-0.3	⊕	-2.8	-11.0	0.4	1.4	⊕	-6.8	-20.8	-44.6	24
1451	1144	893	688	522	390	1.0	4.2	9.9	18.8	31.6	-0.3	⊕	-2.6	-10.4	0.3	1.3	⊕	-6.5	-19.8	-42.1	24
1528	1010	654	407	241	143	1.5	6.4	15.9	31.9	56.7	-0.4	⊕	-1.8	-8.9	0.0	0.9	⊕	-6.1	-20.8	-50.5	24
1645	1300	1021	794	609	459	0.9	3.7	8.7	16.5	27.4	-0.4	⊕	-1.8	-7.7	0.1	0.9	⊕	-5.1	-15.5	-33.0	24
1810	1444	1147	904	704	541	0.8	3.4	7.9	14.9	24.7	-0.4	⊕	-1.5	-6.6	-0.1	0.7	⊕	-4.4	-13.6	-28.9	24
1850	1507	1220	980	778	611	0.8	3.4	8.0	15.0	24.8	-0.3	⊕	-2.1	-8.6	0.2	1.0	⊕	-5.5	-16.5	-34.6	24
2378	1964	1614	1319	1068	856	0.7	3.0	7.2	13.3	22.0	-0.4	⊕	-1.8	-7.8	0.1	0.9	⊕	-5.0	-15.0	-31.2	24
1333	1069	848	665	514	394	1.0	4.3	10.3	19.3	32.4	-0.2	⊕	-3.5	-13.3	0.7	1.7	⊕	-8.1	-24.1	-51.0	16
1271	1046	854	691	553	440	1.0	3.9	9.4	17.4	29.1	-0.1	⊕	-3.9	-14.4	0.8	1.9	⊕	-8.6	-25.2	-52.6	24
1265	1053	869	712	578	466	0.9	3.8	9.0	16.7	27.9	-0.1	⊕	-4.2	-15.2	0.9	2.1	⊕	-9.0	-26.1	-54.1	24
1529	1316	1127	961	814	685	0.7	2.9	6.7	12.5	20.1	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.1	-20.8	-42.0	24
1457	1291	1140	1003	880	768	0.6	2.4	5.7	10.6	16.9	-0.1	⊕	-3.8	-13.9	0.8	1.9	⊕	-8.1	-23.2	-45.9	24
2133	1889	1668	1468	1287	1124	0.5	2.2	5.1	9.4	15.3	-0.2	⊕	-2.8	-10.5	0.5	1.4	⊕	-6.2	-18.0	-36.1	24
2138	1897	1679	1481	1302	1140	0.5	2.2	5.2	9.3	15.1	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.2	-36.6	24
1663	1463	1282	1119	973	845	0.8	3.1	6.9	12.5	20.6	0.1	⊕	-5.4	-18.6	1.4	2.7	⊕	-10.4	-29.7	-59.8	24
2303	2044	1809	1595	1402	1227	0.6	2.3	5.4	10.0	16.1	-0.2	⊕	-3.4	-12.3	0.7	1.7	⊕	-7.2	-20.9	-41.6	24
2224	1957	1716	1499	1303	1128	0.6	2.6	6.2	11.3	18.1	-0.1	⊕	-4.0	-14.4	0.9	2.0	⊕	-8.4	-23.9	-47.5	24
2659	2386	2135	1906	1696	1506	0.5	2.1	4.8	8.6	13.9	-0.2	⊕	-3.1	-11.1	0.6	1.5	⊕	-6.6	-18.7	-37.5	24
2619	2257	1935	1650	1398	1179	0.7	3.1	7.4	13.4	22.0	-0.1	⊕	-4.3	-15.3	1.0	2.1	⊕	-8.9	-25.5	-51.5	24
2627	2290	1987	1717	1476	1264	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.4	-15.7	1.0	2.2	⊕	-9.1	-25.8	-51.8	24
2777	2449	2153	1886	1644	1428	0.6	2.6	6.2	11.3	18.2	-0.1	⊕	-4.3	-15.4	1.0	2.2	⊕	-8.9	-25.2	-50.0	24
2719	2346	2015	1721	1462	1234	0.7	3.0	7.2	13.2	21.3	-0.1	⊕	-4.0	-14.6	0.9	2.0	⊕	-8.5	-24.5	-49.2	24
3548	3133	2758	2420	2115	1841	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3.2	-11.6	0.6	1.6	⊕	-6.9	-19.9	-39.9	24
3810	3459	3135	2835	2558	2303	0.5	1.9	4.3	7.8	12.7	-0.2	⊕	-3.3	-11.8	0.7	1.7	⊕	-6.9	-19.7	-39.1	24
4084	3713	3369	3052	2758	2487	0.4	1.9	4.1	7.4	12	-0.2	⊕	-3	-10.9	0.5	1.5	⊕	-6.4	-18.2	-36	24
4830	4318	3851	3426	30																	

# RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); \* = not for revolvers; ◇ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; CLM = cartridge length longer than SAAMI max. may not fit in all magazines... \*Molycoat: molybdenum disulfide dry film lubricant

## Federal Rifle

ATT	USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN		BULLET STYLE	MUZZLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)				
				GRAMS	GRAINS			100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
<b>FEDERAL POWER•SHOK®</b>												
1		222A	<b>222 REM.</b>	50	3.24	SP	3140	2626	2166	1755	1408	1152
1		223A	<b>223 REM.</b>	55	3.56	SP	3240	2800	2400	2035	1705	1420
2		223L	<b>223 REM.</b>	64	4.15	SP	3050	2682	2342	2027	1740	1485
1		22250A	<b>22-250 REM.</b>	55	3.56	SP	3650	3136	2679	2264	1888	1558
2		243AS	<b>243 WIN.</b>	80	5.18	SP	3350	3051	2790	2543	2309	2088
2		24385LFA	<b>243 WIN.</b>	85	5.51	COPPER HP	3200	2783	2403	2054	1737	1459
2		243B	<b>243 WIN.</b>	100	6.48	SP	2960	2697	2448	2213	1991	1783
2		6B	<b>6MM REM.</b>	100	6.48	SP	3100	2827	2571	2329	2100	1883
2		2506BS	<b>25-06 REM.</b>	117	7.58	SP	3030	2767	2519	2283	2061	1851
2		6555B	<b>6.5X55 SWEDISH</b>	140	9.07	SP	2650	2450	2258	2075	1900	1736
2		270A	<b>270 WIN.</b>	130	8.42	SP	3060	2803	2560	2329	2111	1904
2		270130LFA	<b>270 WIN.</b>	130	8.42	COPPER HP	3060	2729	2422	2135	1867	1625
2		270B	<b>270 WIN.</b>	150	9.72	SPRN	2830	2486	2166	1871	1606	1374
2		270WSME	<b>270 WIN. SHORT MAGNUM</b>	130	8.42	SP	3250	2978	2722	2480	2251	2034
2		7B	<b>7MM MAUSER</b>	140	9.07	SP	2660	2454	2256	2069	1889	1722
2		7A	<b>7MM MAUSER</b>	175	11.34	SPRN	2390	2090	1812	1564	1348	1177
2		708CS	<b>7MM-08 REM.</b>	150	9.72	SP	2650	2438	2235	2043	1859	1689
2		280B	<b>280 REM.</b>	150	9.72	SP	2890	2667	2455	2253	2060	1877
2		7RA	<b>7MM REM. MAGNUM</b>	150	9.72	SP	3110	2841	2587	2347	2120	1905
3		7RB	<b>7MM REM. MAGNUM</b>	175	11.34	SP	2860	2646	2441	2246	2060	1882
2		7WSME	<b>7MM WIN. SHORT MAGNUM</b>	150	9.72	SP	3100	2831	2578	2338	2112	1898
1		30CA	<b>30 CARBINE</b>	110	7.13	SPRN	1990	1564	1231	1031	919	839
2		300BLK120LFA	<b>300 BLACKOUT</b>	120	7.78	COPPER HP	2100	1799	1533	1307	1136	1024
2		76239B	<b>7.62X39MM SOVIET</b>	123	7.97	SP	2350	2055	1783	1539	1329	1164
1		3030C	<b>30-30 WIN.</b>	125	8.1	HP	2570	2083	1656	1309	1079	952
2		3030A	<b>30-30 WIN.</b>	150	9.72	SPFN	2390	2019	1686	1399	1179	1037
2		3030B	<b>30-30 WIN.</b>	170	11.02	SPRN	2200	1894	1619	1380	1191	1060
2		300A	<b>300 SAVAGE</b>	150	9.72	SP	2630	2353	2094	1850	1629	1430
2		300B	<b>300 SAVAGE</b>	180	11.66	SP	2350	2137	1934	1745	1571	1412
2		308A	<b>308 WIN.</b>	150	9.72	SP	2820	2532	2261	2007	1771	1557
2		308150LFA	<b>308 WIN.</b>	150	9.72	COPPER HP	2820	2497	2195	1915	1661	1434
2		308B	<b>308 WIN.</b>	180	11.66	SP	2570	2345	2131	1929	1740	1565
1		3006CS	<b>30-06 SPRING.</b>	125	8.1	SP	3140	2779	2446	2136	1850	1593
2		3006A	<b>30-06 SPRING.</b>	150	9.72	SP	2910	2616	2340	2081	1839	1619
2		3006150LFA	<b>30-06 SPRING.</b>	150	9.72	COPPER HP	2910	2580	2273	1988	1725	1491
2		3006B	<b>30-06 SPRING.</b>	180	11.66	SP	2700	2470	2252	2045	1848	1667
2		3006HS	<b>30-06 SPRING.</b>	220	14.26	SP	2400	2120	1859	1623	1412	1238
2		300WGS	<b>300 WIN. MAGNUM</b>	150	9.72	SP	3150	2898	2661	2435	2221	2017
3		300WBS	<b>300 WIN. MAGNUM</b>	180	11.66	SP	2960	2746	2542	2346	2160	1982
3		300W180LFA	<b>300 WIN. MAGNUM</b>	180	11.66	COPPER HP	2960	2693	2441	2203	1979	1769
3		300WSMC	<b>300 WIN. SHORT MAGNUM</b>	180	11.66	SP	2980	2736	2504	2284	2075	1877
3		300WSM180LFA	<b>300 WIN. SHORT MAGNUM</b>	180	11.66	COPPER HP	2950	2684	2432	2195	1971	1761
2		303B	<b>303 BRITISH</b>	150	9.72	SP	2690	2442	2208	1988	1780	1590
2		303AS	<b>303 BRITISH</b>	180	11.66	SP	2460	2206	1966	1744	1542	1363
2		32A	<b>32 WIN. SPECIAL</b>	170	11.02	SPFN	2250	1923	1630	1376	1179	1047
2		338FJ	<b>338 FEDERAL</b>	200	12.96	SP	2700	2484	2278	2082	1895	1721
2		8A	<b>8MM MAUSER</b>	170	11.02	SP	2250	2025	1814	1620	1444	1292
2		C357G	<b>357 MAGNUM</b>	180	11.66	HP	1550	1282	1095	982	904	841
2		35A	<b>35 REM.</b>	200	12.96	SPRN	2080	1697	1374	1138	999	910
2		350LA	<b>350 LEGEND</b>	180	11.66	SP	2100	1793	1520	1292	1123	1013
3		375A	<b>375 H&amp;H MAGNUM</b>	270	17.5	SP	2690	2418	2162	1922	1700	1500
3		375B	<b>375 H&amp;H MAGNUM</b>	300	19.44	SP	2530	2267	2021	1790	1581	1394
2		C44A	<b>44 REM. MAGNUM</b>	240	15.55	HP	1760	1387	1123	978	885	813
2		4570AS	<b>45-70 GOVERNMENT</b>	300	19.44	HP	1850	1612	1400	1226	1097	1010
2		450BMB	<b>450 BUSHMASTER</b>	300	19.44	SP	1900	1602	1346	1153	1028	945
<b>FEDERAL® NON-TYPICAL</b>												
2		243DT100	<b>243 WIN.</b>	100	6.48	SP	2960	2697	2448	2213	1991	1783
2		65CDT1	<b>6.5 CREEDMOOR</b>	140	9.07	SP	2725	2522	2327	2142	1964	1796
2		270DT130	<b>270 WIN.</b>	130	8.42	SP	3060	2803	2560	2329	2111	1904
2		270DT150	<b>270 WIN.</b>	150	9.72	SPRN	2830	2486	2166	1871	1606	1374
2		3030DT150	<b>30-30 WIN.</b>	150	9.72	SPFN	2390	2019	1686	1399	1179	1037
2		708DT1	<b>7MM-08 REM.</b>	150	9.72	SP	2650	2438	2235	2043	1859	1689
2		3030DT170	<b>30-30 WIN.</b>	170	11.02	SPRN	2200	1894	1619	1380	1191	1060
2		308DT150	<b>308 WIN.</b>	150	9.72	SP	2820	2532	2261	2007	1771	1557
2		308DT180	<b>308 WIN.</b>	180	11.66	SP	2570	2345	2131	1929	1740	1565
2		3006DT150	<b>30-06 SPRING.</b>	150	9.72	SP	2910	2616	2340	2081	1839	1619
2		3006DT180	<b>30-06 SPRING.</b>	180	11.66	SP	2700	2470	2252	2045	1848	1667
2		7RDT150	<b>7MM REM. MAGNUM</b>	150	9.72	SP	3110	2841	2587	2347	2120	1905
2		300WDT150	<b>300 WIN. MAGNUM</b>	150	9.72	SP	3150	2898	2661	2435	2221	2017
3		300WDT180	<b>300 WIN. MAGNUM</b>	180	11.66	SP	2960	2746	2542	2346	2160	1982
2		350LDT1	<b>350 LEGEND</b>	180	11.66	SP	2100	1793	1520	1292	1123	1013
<b>FEDERAL VARMINT &amp; PREDATOR</b>												
1		AE17H20TVP	<b>17 HORNET</b>	20	1.3	TIPPED VARMINT	3610	3042	2541	2092	1694	1361
1		AE22H35TVP	<b>22 HORNET</b>	35	2.27	TIPPED VARMINT	3000	2188	1526	1094	908	795
1		V204VM32	<b>204 RUGER</b>	32	2.07	HORNADY® V-MAX	4100	3536	3040	2596	2193	1827
1		V223VM40	<b>223 REM.</b>	40	2.59	HORNADY V-MAX	3800	3249	2762	2324	1927	1579
1, 5		AE22350VP	<b>223 REM.</b>	50	3.24	JHP	3325	2839	2402	2006	1653	1355
1		V223VM53	<b>223 REM.</b>	53	3.43	HORNADY V-MAX	3400	3046	2720	2416	2132	1868
1		V224VLKM60	<b>224 VALKYRIE</b>	60	3.89	HORNADY V-MAX	3300	2923	2577	2255	1958	1687
1		V22250VM40	<b>22-250 REM.</b>	40	2.59	HORNADY V-MAX	4200	3597	3070	2602	2179	1798
1		V22250VM2	<b>22-250 REM.</b>	55	3.56	HORNADY V-MAX	3670	3244	2858	2504	2176	1873
1, 5		AE22250VP	<b>22-250 REM.</b>	50	3.24	JHP	3850	3303	2819	2384	1990	1639
1		AE24375VP	<b>243 WIN.</b>	75	4.86	JHP	3375	2943	2551	2191	1861	1569
1		V243VM75	<b>243 WIN.</b>	75	4.86	HORNADY V-MAX	3425	3111	2819	2545	2286	2044
1		AE65GDL90VP	<b>6.5MM GRENDAL</b>	90	5.83	SPEER TNT	3000	2641	2309	2002	1721	1472
1		V65CRDVM95	<b>6.5 CREEDMOOR</b>	95	6.16	HORNADY V-MAX	3300	3023	2763	2518	2285	2065
1		AE6890VP	<b>6.8 SPC</b>	90	5.83	JACKETED HOLLOW POINT	2990	2651	2335	2043	1772	1530
1		V308VM110	<b>308 WIN. (7.62X51MM)</b>	110	7.13	HORNADY V-MAX	3300	2954	2635	2336	2058	1799
1		AE308130VP	<b>308 WIN.</b>	130	8.42	JHP	3050	2691	2359	2052	1769	1516
1		V76239VP1	<b>7.62X39MM SOVIET</b>	130	8.42	JACKETED HOLLOW POINT	2300	1997	1720			

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

MUZZLE	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT YARDS, SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGE   LONG RANGE										TEST BARREL LENGTH INCHES
	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	
1095	765	521	342	220	147	1.6	6.9	17.2	34.0	58.9	-0.2	⊕	-3.6	-14.8	0.7	1.8	⊕	-9.3	-30.4	-70.1	24
1282	957	703	505	355	246	1.2	5.3	12.9	25.0	42.6	-0.3	⊕	-3.0	-12.0	0.5	1.5	⊕	-7.6	-23.8	-52.3	24
1322	1022	779	584	430	313	1.2	4.9	11.8	22.6	38.2	-0.2	⊕	-3.3	-13.1	0.6	1.7	⊕	-8.1	-24.7	-53.2	24
1627	1201	876	626	435	296	1.2	4.9	11.9	22.9	39.4	-0.4	⊕	-2.1	-9.0	0.1	1.0	⊕	-5.9	-18.7	-41.8	24
1970	1654	1382	1148	947	774	0.7	3.0	6.9	12.8	21.1	-0.3	⊕	-2.2	-9.0	0.2	1.1	⊕	-5.6	-16.6	-34.2	24
1933	1462	1090	796	569	402	1.2	5.1	12.4	23.9	40.5	-0.3	⊕	-3.0	-12.1	0.5	1.5	⊕	-7.6	-23.6	-51.4	24
1945	1615	1331	1087	880	706	0.9	3.6	8.4	15.8	25.9	-0.2	⊕	-3.3	-12.4	0.6	1.6	⊕	-7.5	-22.1	-45.4	24
2134	1775	1468	1204	979	787	0.8	3.4	7.9	14.8	24.1	-0.3	⊕	-2.9	-11.0	0.5	1.4	⊕	-6.7	-19.9	-40.7	24
2385	1989	1648	1354	1104	890	0.8	3.4	8	14.9	24.4	-0.2	⊕	-3.1	-11.6	0.5	1.5	⊕	-7.0	-20.8	-42.5	24
2183	1865	1585	1338	1122	937	0.7	3.3	7.8	14.3	23.6	-0.1	⊕	-4.3	-15.5	1.0	2.2	⊕	-9.0	-25.9	-52.8	24
2703	2267	1891	1566	1286	1046	0.8	3.2	7.6	14.2	23.1	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.7	-20.0	-40.9	24
2703	2150	1693	1315	1006	763	1.0	4.3	10.3	19.3	32.6	-0.2	⊕	-3.2	-12.4	0.6	1.6	⊕	-7.6	-22.7	-48.4	24
2667	2057	1563	1166	859	629	1.3	5.4	12.8	24.9	41.7	-0.1	⊕	-4.2	-15.7	0.9	2.1	⊕	-9.4	-29.2	-62.6	24
3049	2559	2138	1775	1462	1194	0.7	3.0	7.1	13.2	21.7	-0.3	⊕	-2.4	-9.6	0.3	1.2	⊕	-5.9	-17.5	-36.0	24
2199	1871	1583	1330	1109	922	0.8	3.4	8.0	14.7	24.3	-0.1	⊕	-4.3	-15.5	1.0	2.1	⊕	-9.0	-25.9	-53.1	24
2219	1697	1276	950	706	538	1.6	6.5	16.0	30.2	50.2	0.1	⊕	-6.5	-23.7	1.7	3.2	⊕	-14.1	-42.4	-90.4	24
2339	1979	1664	1390	1151	950	0.8	3.5	8.3	15.3	25.4	-0.1	⊕	-4.4	-15.7	1.0	2.2	⊕	-9.2	-26.5	-54.4	24
2782	2369	2008	1690	1414	1173	0.8	3.1	7.3	13.6	22.0	-0.2	⊕	-3.4	-12.6	0.7	1.7	⊕	-7.5	-21.9	-44.2	24
3221	2687	2229	1834	1497	1209	0.8	3.3	7.7	14.5	23.6	-0.3	⊕	-2.8	-10.8	0.4	1.4	⊕	-6.6	-19.6	-40.1	24
3178	2720	2316	1961	1649	1377	0.8	3.0	7.2	13.3	21.4	-0.2	⊕	-3.5	-12.8	0.7	1.7	⊕	-7.6	-22.1	-44.6	24
3200	2669	2213	1821	1486	1199	0.8	3.3	7.7	14.5	23.7	-0.3	⊕	-2.9	-10.9	0.5	1.4	⊕	-6.6	-19.7	-40.4	24
967	597	370	260	206	172	3.5	15.1	35.8	63.7	97.4	0.7	⊕	-13.0	-49.1	3.9	6.5	⊕	-29.7	-90.9	-190.2	18
1175	863	626	455	344	279	1.9	8.7	20.9	39.2	63.2	0.4	⊕	-9.4	-33.7	2.7	4.7	⊕	-19.6	-59.9	-127.1	16
1508	1153	868	646	482	370	1.6	6.7	16.2	30.7	50.8	0.2	⊕	-6.7	-24.6	1.8	3.4	⊕	-14.5	-43.9	-93.3	20
1833	1204	761	476	323	252	2.3	10.2	25.6	49.9	81.6	0.1	⊕	-6.7	-26.4	1.7	3.3	⊕	-16.4	-53.7	-120.6	24
1902	1358	947	652	463	358	2.0	8.6	20.8	40.0	65.9	0.1	⊕	-7.2	-26.7	1.9	3.6	⊕	-15.9	-50.1	-109.8	24
1827	1354	990	719	535	424	1.8	8.1	19.4	36.7	59.9	0.3	⊕	-8.4	-30	2.4	4.2	⊕	-17.4	-53.5	-114.4	24
2304	1844	1460	1140	884	681	1.1	4.9	11.5	22.1	36.4	-0.1	⊕	-4.8	-17.5	1.2	2.4	⊕	-10.2	-31.1	-64.8	24
2207	1825	1495	1217	986	797	1.2	4.5	10.9	20.5	33.3	0.1	⊕	-6.1	-21.6	1.6	3.0	⊕	-12.5	-36.5	-74.4	24
2648	2134	1702	1341	1044	807	1.1	4.4	10.4	19.7	32.9	-0.1	⊕	-3.9	-14.7	0.8	2.0	⊕	-8.8	-26.3	-55.2	24
2648	2076	1605	1221	918	685	1.2	5.0	12.0	23.0	38.4	-0.1	⊕	-4.1	-15.4	0.9	2.1	⊕	-9.2	-28.3	-59.9	24
2640	2197	1816	1486	1209	979	0.9	4.1	9.4	17.8	29.4	0.0	⊕	-4.9	-17.3	1.2	2.4	⊕	-10.0	-29.5	-60.7	24
2736	2143	1660	1267	949	704	1.0	4.5	10.8	20.4	34.6	-0.3	⊕	-3.0	-11.9	0.5	1.5	⊕	-7.4	-22.3	-48.0	24
2820	2279	1823	1442	1126	873	1.0	4.2	10.0	18.7	31.4	-0.2	⊕	-3.6	-13.6	0.7	1.8	⊕	-8.2	-24.4	-51.3	24
2820	2217	1721	1316	991	740	1.2	4.8	11.5	21.9	36.7	-0.2	⊕	-3.7	-14.3	0.8	1.9	⊕	-8.7	-26.2	-55.7	24
2913	2439	2026	1671	1365	1111	0.9	3.7	8.8	16.2	27.0	-0.1	⊕	-4.2	-15.3	1.0	2.1	⊕	-9.0	-26.2	-54.0	24
2813	2196	1688	1286	974	748	1.5	5.9	14.6	27.3	45.4	0.1	⊕	-6.2	-22.7	1.7	3.1	⊕	-13.5	-40.0	-84.5	24
3305	2798	2358	1975	1643	1355	0.7	3.0	6.9	12.9	21.1	-0.3	⊕	-2.7	-10.2	0.4	1.3	⊕	-6.2	-18.3	-37.5	24
3502	3013	2582	2200	1864	1570	0.7	2.9	6.6	12.3	20.0	-0.2	⊕	-3.1	-11.6	0.6	1.6	⊕	-6.9	-20.3	-41.0	24
3502	2898	2382	1940	1565	1250	0.9	3.6	8.6	16.0	26.4	-0.2	⊕	-3.3	-12.5	0.6	1.6	⊕	-7.5	-22.2	-45.8	24
3549	2991	2506	2084	1721	1408	0.8	3.2	7.6	14.2	23.0	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.1	-21.0	-42.7	24
3478	2878	2364	1925	1552	1240	0.9	3.6	8.6	16.1	26.5	-0.2	⊕	-3.3	-12.6	0.6	1.7	⊕	-7.6	-22.4	-46.2	24
2410	1987	1624	1316	1055	842	0.9	4.1	9.7	18.0	30.0	-0.1	⊕	-4.4	-15.9	1.0	2.2	⊕	-9.3	-27.4	-56.9	24
2418	1944	1545	1215	950	742	1.2	5.1	12.2	23.0	37.9	0.1	⊕	-5.7	-20.4	1.5	2.8	⊕	-11.9	-35.3	-73.6	24
1911	1395	1002	715	524	414	1.8	8.4	20.1	38.3	62.5	0.2	⊕	-8.1	-29.3	2.3	4.0	⊕	-17.2	-53.1	-114.4	24
3237	2740	2304	1824	1594	1313	0.8	3.4	8.2	15.0	24.9	-0.1	⊕	-4.1	-15.0	0.9	2.1	⊕	-8.8	-25.5	-52.2	24
1911	1548	1242	991	786	630	1.3	5.3	12.8	23.7	39.1	0.2	⊕	-6.9	-24.8	1.9	3.5	⊕	-14.3	-41.6	-86.1	24
960	657	479	385	326	283	3.5	14.2	31.2	53.4	79.9	1.5	⊕	-19.7	-68.1	6.4	9.9	⊕	-38.5	-111.9	-225.7	18
1921	1278	838	575	443	368	2.8	12.0	29.1	53.5	83.6	0.5	⊕	-10.7	-40.2	3.2	5.4	⊕	-24.1	-75.1	-159.2	24
1762	1284	924	668	504	410	2	8.9	21.6	40.4	64.9	0.4	⊕	-9.4	-34.1	2.8	4.7	⊕	-20	-61	-129.6	16
4338	3505	2803	2214	1733	1348	1.0	4.6	10.7	20.4	33.9	-0.1	⊕	-4.5	-16.4	1.0	2.3	⊕	-9.6	-28.9	-60.3	24
4263	3424	2720	2135	1665	1294	1.2	5.0	11.8	22.5	37.1	0.0	⊕	-5.3	-19.1	1.3	2.6	⊕	-11.1	-33.5	-69.5	24
1651	1025	672	509	417	352	3.9	16.5	37.1	64.0	96.4	1.0	⊕	-16.8	-60.9	5.2	8.4	⊕	-35.6	-106.0	-217.7	20
2280	1730	1305	1001	802	679	2.3	8.8	20.7	37.8	59.5	0.7	⊕	-11.9	-41.7	3.7	5.9	⊕	-23.9	-71.0	-146.8	24
2405	1708	1208	885	703	595	2.7	10.8	25.6	46.5	72.4	0.7	⊕	-12.2	-43.7	3.7	6.1	⊕	-25.4	-77.1	-160.6	24
1945	1615	1331	1087	880	706	0.9	3.6	8.4	15.8	25.9	-0.2	⊕	-3.3	-12.4	0.6	1.6	⊕	-7.5	-22.1	-45.4	24
2308	1977	1683	1426	1199	1003	0.8	3.1	7.5	13.8	22.5	-0.1	⊕	-4.0	-14.4	0.9	2.0	⊕	-8.5	-24.4	-49.4	24
2703	2267	1891	1566	1286	1046	0.8	3.2	7.6	14.2	23.1	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.7	-20.0	-40.9	24
2667	2057	1563	1166	859	629	1.3	5.4	12.8	24.9	41.7	-0.1	⊕	-4.2	-15.7	0.9	2.1	⊕	-9.4	-29.2	-62.6	24
1902	1358	947	652	463	358	2.0	8.6	20.8	40.0	65.9	0.1	⊕	-7.2	-26.7	1.9	3.6	⊕	-15.9	-50.1	-109.8	24
2339	1979	1664	1390	1151	950	0.8	3.5	8.3	15.3	25.4	-0.1	⊕	-4.4	-15.7	1	2.2	⊕	-9.2	-26.5	-54.4	24
1827	1354	990	719	535	424	1.8	8.1	19.4	36.7	59.9	0.3	⊕	-8.4	-30	2.4	4.2					



# RIFLE BALLISTICS

Abbreviation Key: BHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; ◊ = nickel-plated case; RMEF = a portion of the proceeds from the sale of this product is donated to Rocky Mountain Elk Foundation; CLM = cartridge length longer than SAAMI max. may not fit in all magazines.. \*Molycoat: molybdenum disulfide dry film lubricant

## American Eagle Rifle

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN		BULLET STYLE	MUZZLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)				
			GRAINS	GRAMS			100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
<b>AMERICAN EAGLE</b>											
5	AE5728A	<b>5.7X28</b>	40	2.59	TMJ	2250	1606	1151	942	825	735
1, 5	AE223G	<b>223 REM.</b>	50	3.24	SPEER TNT JHP	3325	2839	2402	2006	1653	1355
5	AE223	<b>223 REM.</b>	55	3.56	FMJ BT	3240	2874	2536	2222	1931	1667
5	AE223N	<b>223 REM.</b>	62	4.02	FMJ BT	3020	2713	2426	2156	1904	1674
5	AE223T75	<b>223 REM.</b>	75	4.86	TMJ	2775	2550	2336	2132	1938	1756
5	AE224VLK1	<b>224 VALKYRIE</b>	75	4.86	TMJ	3000	2763	2539	2325	2122	1929
1, 5	AE22250G	<b>22-250 REM.</b>	50	3.24	JHP	3850	3303	2819	2384	1990	1639
5	AE65GDL1	<b>6.5MM GRENDDEL</b>	120	7.97	SPEER TNT JHP	2580	2410	2246	2089	1938	1794
5	AE65CRD2	<b>6.5 CREEDMOOR</b>	120	7.78	OTM	2900	2680	2470	2270	2079	1897
5	AE68A	<b>6.8 SPC</b>	115	7.45	FMJ	2675	2442	2221	2012	1815	1633
5	AE30CB	<b>30 CARBINE</b>	110	7.13	FMJ	1990	1564	1231	1031	919	839
5	AE300BLK1	<b>300 BLACKOUT</b>	150	9.72	FMJ BT	1900	1724	1561	1411	1282	1174
5	AE300BLKSUP2	<b>300 BLACKOUT</b>	220	14.26	OTM	1000	970	944	920	897	876
5	A76239A	<b>7.62X39MM SOVIET</b>	124	8.04	FMJ	2350	2078	1824	1595	1392	1224
5	AE308D	<b>308 WIN.</b>	150	9.72	FMJ BT	2820	2597	2385	2183	1990	1808
5	A76251M1A	<b>7.62X51MM</b>	168	10.89	OTM	2650	2459	2276	2101	1933	1774
5	AE3006M1	<b>30-06 SPRING.</b>	150	9.72	FMJ BT	2740	2522	2314	2116	1928	1751
5	AE3006N	<b>30-06 SPRING.</b>	150	9.72	FMJ BT	2910	2683	2466	2260	2064	1877
5	AE338L	<b>338 LAPUA MAG</b>	250	16.2	JSP	2875	2708	2547	2392	2242	2097

## Fusion Rifle

USAGE	FEDERAL LOAD NO.	CALIBER	BULLET WEIGHT IN		BULLET STYLE	MUZZLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)				
			GRAINS	GRAMS			100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
<b>FUSION</b>											
2	F223FS1	<b>223 REM.</b>	62	4.02	FUSION	3000	2697	2413	2148	1898	1671
2	F22250FS1	<b>22-250 REM.</b>	55	3.56	FUSION	3600	3108	2667	2267	1902	1580
2	F243FS1	<b>243 WIN.</b>	95	6.16	FUSION	2980	2730	2493	2268	2056	1854
2	F2506FS1	<b>25-06 REM.</b>	120	7.78	FUSION	2980	2778	2585	2399	2222	2052
2	F65CRDFS1	<b>6.5 CREEDMOOR</b>	140	9.07	FUSION	2725	2522	2327	2142	1964	1796
3	F6555FS1	<b>6.5X55 SWEDISH</b>	140	9.07	FUSION	2530	2336	2150	1973	1804	1648
2	F65PRCF1	<b>6.5 PRC</b>	140	9.07	FUSION	2925	2713	2510	2316	2131	1954
2	F6555FSI2	<b>6.5X55 SWEDISH</b>	156	10.11	FUSION	2500	2326	2159	1999	1845	1702
2	F260FS1	<b>260 REM.</b>	120	7.78	FUSION	2950	2710	2483	2266	2061	1866
2	F270FS1	<b>270 WIN.</b>	130	8.42	FUSION	3050	2811	2584	2368	2163	1968
2	F270FS2	<b>270 WIN.</b>	150	9.72	FUSION	2850	2655	2468	2289	2117	1953
2	F270WSMFS1	<b>270 WIN. SHORT MAGNUM</b>	150	9.72	FUSION	3060	2867	2682	2504	2333	2169
2	F708FS2	<b>7MM-08 REM.</b>	120	7.78	FUSION	3000	2719	2455	2206	1971	1753
2	F708FS1	<b>7MM-08 REM.</b>	140	9.07	FUSION	2850	2615	2393	2181	1980	1791
2	F280FS1	<b>280 REM.</b>	140	9.07	FUSION	2990	2794	2607	2427	2255	2089
3	F7RFS1	<b>7MM REM. MAGNUM</b>	150	9.72	FUSION	3050	2861	2680	2505	2338	2177
3	F7RFS2	<b>7MM REM. MAGNUM</b>	175	11.34	FUSION	2760	2592	2430	2274	2123	1978
3	F7WSMFS1	<b>7MM WIN. SHORT MAGNUM</b>	150	9.72	FUSION	3100	2911	2730	2556	2388	2227
2	F76239FS1	<b>7.62X39MM SOVIET</b>	123	7.97	FUSION	2350	2077	1823	1593	1389	1222
2	F3030FS1	<b>30-30 WIN.</b>	150	9.72	FUSION	2390	2086	1805	1553	1337	1167
2	F3030FS2	<b>30-30 WIN.</b>	170	11.02	FUSION	2200	1950	1719	1510	1329	1182
2	F308FS1	<b>308 WIN.</b>	150	9.72	FUSION	2820	2600	2391	2191	2001	1821
2	F308FS2	<b>308 WIN.</b>	165	10.69	FUSION	2700	2501	2310	2128	1954	1789
2	F308FS3	<b>308 WIN.</b>	180	11.66	FUSION	2600	2427	2260	2101	1947	1801
2	F3006FS1	<b>30-06 SPRING.</b>	150	9.72	FUSION	2900	2674	2459	2254	2059	1874
2	F3006FS2	<b>30-06 SPRING.</b>	165	10.69	FUSION	2790	2590	2399	2217	2042	1875
2	F3006FS3	<b>30-06 SPRING.</b>	180	11.66	FUSION	2700	2521	2349	2185	2026	1874
2	F300WFS1	<b>300 WIN. MAGNUM</b>	150	9.72	FUSION	3200	2958	2729	2512	2304	2107
2	F300WFS2	<b>300 WIN. MAGNUM</b>	165	10.69	FUSION	3080	2865	2660	2464	2276	2097
2	F300WFS3	<b>300 WIN. MAGNUM</b>	180	11.66	FUSION	2960	2766	2580	2401	2230	2065
2	F300WSMFS3	<b>300 WIN. SHORT MAGNUM</b>	150	9.72	FUSION	3250	3005	2774	2555	2345	2146
2	F300WSMFS1	<b>300 WIN. SHORT MAGNUM</b>	165	10.69	FUSION	3100	2885	2680	2484	2296	2116
2	F300WSMFS2	<b>300 WIN. SHORT MAGNUM</b>	180	11.66	FUSION	2950	2756	2570	2391	2220	2055
2	F338FFS2	<b>338 FEDERAL</b>	200	12.96	FUSION	2700	2487	2284	2090	1905	1733
2	F338FS1	<b>338 WIN. MAGNUM</b>	225	14.58	FUSION	2850	2661	2479	2305	2138	1978
2	F35FS1	<b>35 WHELEN</b>	200	12.96	FUSION	2800	2537	2289	2055	1835	1634
2	F350LFS1	<b>350 LEGEND</b>	160	10.37	FUSION	2300	1993	1712	1463	1257	1107
2	F4570FS1	<b>45-70 GOVERNMENT</b>	300	19.44	FUSION	1850	1612	1401	1227	1099	1011
2	F450BMFS1	<b>450 BUSHMASTER</b>	260	16.85	FUSION	2200	1777	1419	1155	1002	907
<b>FUSION MSR</b>											
2	F223MSR1	<b>223 REM.</b>	62	4.02	FUSION	2750	2463	2194	1942	1710	1500
2	F224VLKMSR1	<b>224 VALKYRIE</b>	90	5.83	FUSION	2700	2491	2291	2101	1919	1749
2	F65GDLMSR1	<b>6.5MM GRENDDEL</b>	120	7.78	FUSION	2600	2346	2107	1881	1674	1485
2	F68MSR2	<b>6.8 SPC</b>	90	5.83	FUSION	2850	2524	2221	1939	1682	1453
2	F68MSR1	<b>6.8 SPC</b>	115	7.45	FUSION	2470	2248	2037	1838	1654	1485
2	F300BMSR2	<b>300 BLACKOUT</b>	150	9.72	FUSION	1900	1685	1490	1320	1181	1079
2	F308MSR1	<b>308 WIN.</b>	150	9.72	FUSION	2770	2553	2345	2148	1960	1782
2	F338FMSR2	<b>338 FEDERAL</b>	185	11.99	FUSION	2680	2447	2226	2016	1819	1636

Usage Key: 1 = Varmints, predators, small game; 2 = medium game; 3 = large, heavy game; 4 = dangerous game; 5 = target shooting, training, practice; 6 = self defense; 7 = competition shooting; 8 = pest control; 9 = low noise, training, specialty.

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

MUZZLE	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT 0 YARDS, SIGHTS 1.5 INCHES ABOVE BORE LINE. LONG RANGE										TEST BARREL LENGTH INCHES			
	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	AVERAGE RANGE		100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.		400 YDS.	500 YDS.	
												100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.		100 YDS.	200 YDS.	300 YDS.
450	229	118	79	60	48	4.4	20.2	48.0	84.7	129.1	0.5	⊕	-12.6	-51.3	3.6	6.3	⊕	-32.4	-101.1	-216.1	24			
1227	895	640	447	303	204	1.3	5.6	13.8	27.1	46.5	-0.3	⊕	-2.8	-11.8	0.4	1.4	⊕	-7.5	-24.0	-53.7	24			
1282	1008	785	603	455	339	1.0	4.3	10.2	19.4	32.7	-0.3	⊕	-2.7	-10.9	0.4	1.4	⊕	-6.8	-20.6	-44.2	24			
1255	1013	810	640	499	386	1.0	4.0	9.7	18.1	30.4	-0.2	⊕	-3.2	-12.4	0.6	1.6	⊕	-7.6	-22.6	-47.6	24			
1282	1083	908	757	625	514	0.8	3.4	8.1	14.9	24.6	-0.1	⊕	-3.8	-14.1	0.8	1.9	⊕	-8.4	-24.2	-49.6	24			
1499	1272	1073	900	750	619	0.7	3.1	7.2	13.4	21.8	-0.2	⊕	-3.1	-11.5	0.5	1.5	⊕	-6.9	-20.4	-41.3	24			
1645	1211	882	631	439	298	1.1	4.7	11.3	21.9	37.5	-0.4	⊕	-1.7	-7.8	0.0	0.9	⊕	-5.3	-16.8	-37.5	24			
1818	1586	1378	1192	1026	879	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.5	-16.0	1.1	2.3	⊕	-9.2	-26.1	-52.5	24			
2241	1913	1626	1373	1152	959	0.8	3.1	7.2	13.3	21.5	-0.2	⊕	-3.3	-12.4	0.6	1.7	⊕	-7.4	-21.6	-43.5	24			
1827	1523	1260	1034	841	681	0.9	3.8	9.1	16.9	28.0	-0.1	⊕	-4.4	-15.8	1.0	2.2	⊕	-9.2	-27.0	-55.8	24			
967	597	370	260	206	172	3.5	15.1	35.8	63.7	97.4	0.7	⊕	-13.0	-49.1	3.9	6.5	⊕	-29.7	-90.9	-190.2	18			
1202	990	811	663	547	459	1.6	6.1	13.7	25.3	40.6	0.6	⊕	-10.3	-34.7	3.2	5.1	⊕	-19.3	-56.3	-114.5	16			
488	460	435	413	393	375	0.7	3.3	7.2	12.5	19.1	3.7	⊕	-35.6	-110.4	12.6	17.8	⊕	-56.9	-154.7	-294.9	16			
1520	1189	916	701	533	412	1.5	6.0	14.7	27.6	45.7	0.1	⊕	-6.5	-23.8	1.8	3.3	⊕	-14.0	-41.5	-87.5	20			
2648	2246	1894	1586	1319	1089	0.8	3.3	7.8	14.4	23.3	-0.2	⊕	-3.6	-13.5	0.8	1.8	⊕	-8.0	-23.3	-47.2	24			
2619	2255	1932	1646	1394	1174	0.7	3.1	7.4	13.5	22.1	-0.1	⊕	-4.3	-15.3	1.0	2.1	⊕	-8.9	-25.5	-51.6	24			
2500	2118	1783	1492	1238	1021	0.8	3.4	8.0	14.7	24.3	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.6	-24.7	-50.5	24			
2820	2397	2026	1701	1419	1173	0.8	3.2	7.4	13.7	22.2	-0.2	⊕	-3.3	-12.4	0.6	1.7	⊕	-7.4	-21.7	-43.8	24			
4588	4070	3601	3175	2789	2442	0.6	2.4	5.3	9.8	15.9	-0.2	⊕	-3.2	-11.8	0.6	1.6	⊕	-6.9	-20.0	-40.1	24			

MUZZLE	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT 0 YARDS, SIGHTS 1.5 INCHES ABOVE BORE LINE. LONG RANGE										TEST BARREL LENGTH INCHES			
	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	AVERAGE RANGE		100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.		400 YDS.	500 YDS.	
												100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.		100 YDS.	200 YDS.	300 YDS.
1239	1001	802	635	496	384	1.0	4.0	9.7	18.1	30.4	-0.2	⊕	-3.3	-12.6	0.6	1.6	⊕	-7.7	-22.8	-48.0	24			
1583	1179	869	627	442	305	1.1	4.8	11.6	22.3	38.3	-0.4	⊕	-2.1	-9.2	0.2	1.1	⊕	-6.0	-18.8	-41.8	24			
1873	1572	1311	1085	891	725	0.8	3.3	7.8	14.6	23.7	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.2	-21.2	-43.2	24			
2366	2056	1780	1534	1315	1122	0.6	2.6	6.0	11.3	18.3	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.7	-19.5	-39.3	24			
2308	1977	1683	1426	1199	1003	0.8	3.1	7.5	13.8	22.5	-0.1	⊕	-4.0	-14.4	0.9	2.0	⊕	-8.5	-24.4	-49.4	24			
1990	1696	1437	1210	1012	844	0.8	3.6	8.3	15.3	25.3	0.0	⊕	-4.9	-17.4	1.2	2.5	⊕	-9.9	-28.7	-58.7	24			
2659	2287	1958	1667	1411	1187	0.7	2.9	6.7	12.5	20.2	-0.2	⊕	-3.2	-12	0.6	1.6	⊕	-7.1	-20.8	-42	24			
2165	1874	1614	1384	1179	1003	0.7	3.3	7.7	13.7	22.7	0.0	⊕	-5.0	-17.5	1.2	2.5	⊕	-10.0	-28.3	-57.5	24			
2319	1957	1642	1369	1132	928	0.8	3.3	7.6	14.2	23.0	-0.2	⊕	-3.2	-12.1	0.6	1.6	⊕	-7.3	-21.4	-43.4	24			
2685	2280	1927	1618	1350	1117	0.7	3.0	7.0	13.1	21.3	-0.2	⊕	-2.9	-11.0	0.5	1.5	⊕	-6.6	-19.6	-39.8	24			
2705	2347	2029	1745	1493	1270	0.7	2.8	6.5	12.0	19.3	-0.2	⊕	-3.4	-12.6	0.7	1.7	⊕	-7.4	-21.6	-43.3	24			
3118	2737	2395	2088	1813	1567	0.5	2.4	5.5	10.0	16.3	-0.3	⊕	-2.8	-10.3	0.4	1.4	⊕	-6.2	-17.9	-36.1	24			
2398	1970	1605	1296	1035	819	0.9	3.7	8.8	16.5	27.3	-0.2	⊕	-3.2	-12.2	0.6	1.6	⊕	-7.4	-22.0	-45.6	24			
2525	2126	1779	1479	1219	997	0.9	3.4	8.0	14.9	24.3	-0.2	⊕	-3.6	-13.3	0.7	1.8	⊕	-7.9	-23.2	-47.2	24			
2779	2427	2113	1831	1580	1357	0.6	2.5	5.8	10.7	17.5	-0.2	⊕	-3.0	-11.0	0.5	1.5	⊕	-6.5	-19.1	-38.5	24			
3098	2726	2391	2091	1820	1578	0.5	2.3	5.4	9.8	16.0	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.2	-17.9	-36.1	24			
2960	2610	2294	2008	1751	1521	0.7	2.5	5.8	10.8	17.4	-0.1	⊕	-3.6	-13.2	0.8	1.8	⊕	-7.8	-22.3	-44.5	24			
3200	2822	2481	2175	1899	1652	0.5	2.2	5.2	9.5	15.4	-0.3	⊕	-2.6	-9.9	0.4	1.3	⊕	-6.0	-17.2	-34.7	24			
1508	1178	907	693	527	407	1.5	6.0	14.8	27.7	45.9	0.1	⊕	-6.5	-23.8	1.8	3.3	⊕	-14.0	-41.6	-87.7	24			
1902	1449	1085	803	595	453	1.6	6.6	16.2	30.8	51.1	0.1	⊕	-6.5	-23.9	1.7	3.2	⊕	-14.2	-42.8	-91.5	24			
1827	1435	1115	860	666	527	1.4	6.3	15.1	28.5	46.7	0.3	⊕	-7.7	-27.2	2.2	3.9	⊕	-15.6	-46.8	-97.8	24			
2648	2252	1903	1599	1333	1104	0.8	3.2	7.6	14.1	22.9	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.1	-46.9	24			
2671	2291	1955	1660	1399	1173	0.7	3.1	7.5	13.7	22.3	-0.1	⊕	-4.1	-14.7	0.9	2.0	⊕	-8.6	-24.8	-50.1	24			
2702	2354	2042	1763	1515	1296	0.6	2.9	6.9	12.6	20.4	-0.1	⊕	-4.4	-15.7	1.0	2.2	⊕	-9.1	-25.8	-51.9	24			
2801	2382	2014	1693	1412	1169	0.8	3.1	7.4	13.7	22.2	-0.2	⊕	-3.4	-12.5	0.7	1.7	⊕	-7.5	-21.8	-44.1	24			
2852	2458	2109	1800	1527	1287	0.8	2.9	7.0	12.9	20.7	-0.1	⊕	-3.7	-13.4	0.8	1.8	⊕	-7.9	-22.9	-46.0	24			
2913	2540	2206	1907	1640	1403	0.7	2.7	6.6	12.1	19.4	-0.1	⊕	-4.0	-14.3	0.9	2.0	⊕	-8.4	-23.9	-47.8	24			
3410	2915	2481	2101	1769	1479	0.6	2.7	6.4	11.8	19.4	-0.3	⊕	-2.5	-9.6	0.3	1.2	⊕	-5.9	-17.3	-35.4	24			
3475	3006	2591	2223	1898	1610	0.6	2.6	6.1	11.2	18.3	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.3	-37.1	24			
3502	3057	2659	2304	1987	1704	0.6	2.6	5.9	10.9	17.7	-0.2	⊕	-3.1	-11.3	0.6	1.5	⊕	-6.7	-19.5	-39.4	24			
3518	3008	2563	2173	1832	1534	0.6	2.7	6.3	11.6	18.9	-0.3	⊕	-2.4	-9.3	0.3	1.2	⊕	-5.7	-16.7	-34.2	24			
3521	3048	2630	2260	1931	1641	0.6	2.6	6.0	11.1	18.1	-0.3	⊕	-2.7	-10.2	0.4	1.4	⊕	-6.2	-18.0	-36.5	24			
3478	3035	2639	2285	1969	1688	0.6	2.6	5.9	11.0	17.9	-0.2	⊕	-3.1	-11.4	0.6	1.5	⊕	-6.8	-19.7	-39.7	24			
3237	2746	2316	1940	1612	1334	0.8	3.4	8.1	14.8	24.4	-0.1	⊕	-4.1	-15.0	0.9	2.1	⊕	-8.8	-25.3	-51.9	24			
4058	3537	3071	2654	2283	1954	0.7	2.7	6.2	11.6	18.7	-0.2	⊕	-3.4	-12.5	0.7	1.7	⊕	-7.3	-21.3	-42.8	24			
3481	2858	2327	1876	1495	1185	1.0	4.0	9.5	17.7	29.6	-0.1	⊕	-3.9	-14.5	0.8	2.0	⊕	-8.7	-25.4	-53.0	24			
1879	1411	1041	760	562	435	1.8	7.4	17.8	33.9	55.8	0.2	⊕	-7.3	-26.6	2	3.7	⊕	-15.6	-47.8	-102.4	16			
2280	1731	1307	1003	804	681	2.3	8.7	20.6	37.6	59.3	0.7	⊕	-11.9	-41.6	3.7	5.9	⊕	-23.8	-70.9	-146.5	24			
2794	1823	1162	770	579	47																			