VX223 · .223 REM · 60 GR SOLID COPPER HP

Two-rifle accuracy against five factory loads, windshield barrier and bare gelatin

TEST DATE	LOCATION	PROTOCOL
2026-03-04	Host agency range, TX	5-shot groups, 100 yd
CARTRIDGE	**PROJECTILE**	**COMPARISON**
.223 Remington	60 gr solid copper HP	5 factory loads, 69–77 gr

7/8″
BEST GROUP OF FIVE LOADS
14.5″ DM RIFLE

SD 8.8
BEST VELOCITY CONSISTENCY
11.5″ DUTY RIFLE

79%
WEIGHT RETAINED THROUGH GLASS
HIGHEST OF THREE LOADS

PROJECTILE & TEST PLATFORM



Figure 1 — VX223 60 gr .223 Rem, Military & Law Enforcement packaging.

PROJECTILE	
Weight	**60 gr**
Material	Solid copper, hollow point
TEST PLATFORM	
Rifles	11.5″ duty · 14.5″ DM twist and optic not recorded
Chronograph	Garmin

ACCURACY & VELOCITY — 11.5″ DUTY RIFLE

Table 1 — Five loads, 5-shot groups at 100 yards, in the order fired. **n** is the number of shots the chronograph recorded for each string; no PMC X-Tac string was recorded for this rifle. Shot-by-shot record on page 3.

LOAD	AVG VELOCITY	N	SD	ES	GROUP	TARGET
Speer Gold Dot 75 gr	2,275.5 fps	4	15.1	38.5	1 3/4″	mid right
Federal 69 gr Tac Tip	2,436 fps	3	11.6	27.3	2 1/2″	top right
Velocitas VX223 60 gr	**2,510.2 fps**	**4**	**8.8**	**22.1**	**3 1/2″**	**bottom left**
Federal 77 gr	2,202.7 fps	4	15.0	37.1	1 3/4″	mid left
Federal 77 gr Sierra	2,288.2 fps	3	13.5	32.1	2 5/8″	top left

ABOUT THE GROUP COLUMN

The 11.5″ rifle was the host agency's duty carbine, a mixed-parts build. Everything fired through it opened up. All five loads grouped larger here than the same load did in the 14.5″ rifle on page 2, without exception, averaging **2.43″** against **1.30″**. The 14.5″ shot as expected; this rifle did not. Read this column as a comparison between loads in one rifle, not as what any of these loads can do.

Single-day test. Velocity figures are from the chronograph record for the strings named; group sizes were measured on paper. Terminal results are one shot per load per barrier and are not a statistical sample. Results vary with barrel length, load and conditions. © Velocitas Bullet Systems LLC. Provided for evaluation.

ACCURACY & VELOCITY — 14.5″ RIFLE

Table 2 — Six loads, 5-shot groups at 100 yards, in the order fired. **Target** gives the position of that load's group on the board in Figure 3.

LOAD	AVG VELOCITY	N	SD	ES	GROUP	TARGET
Federal 69 gr Tac Tip	2,715.1 fps	1	—	—	1 3/8″	bottom right
Federal 77 gr Sierra	2,479.1 fps	3	14.0	33.7	2″	mid right
Federal 77 gr	2,411.6 fps	4	36.1	83.5	1″	top right
Velocitas VX223 60 gr	**2,716.6 fps**	**3**	**18.7**	**45.0**	**7/8″**	**bottom left**
Speer Gold Dot 75 gr	2,477.7 fps	4	15.1	41.4	1 1/16″	mid left
PMC X-Tac Match 77 gr	2,418.1 fps	3	21.4	52.3	1 1/2″	top left

TERMINAL PERFORMANCE — WINDSHIELD BARRIER

Table 3 — Through automotive glass, then into gelatin. One shot per load.

LOAD	RETAINED WT.	RETENTION	PENETRATION	CAVITATION LENGTH
Velocitas VX223 60 gr	**47.4 gr**	**79.0%**	**~16″**	**9″**
Speer Gold Dot 75 gr	51.6 gr	68.8%	~21 1/4″	12″
PMC X-Tac 77 gr	38.8 gr	50.4%	8 1/2″	6″

TERMINAL PERFORMANCE — BARE GELATIN

Table 4 — No barrier. One shot per load. No retained weights were recorded for these shots.

LOAD	PENETRATION	CAVITATION LENGTH	NOTE
Velocitas VX223 60 gr	**21 3/4″**	**14″**	**—**
Speer Gold Dot 75 gr	20″	11″	—
PMC X-Tac 77 gr	17″	11″	~4″ travel before opening

Single-day test. Velocity figures are from the chronograph record for the strings named; group sizes were measured on paper. Terminal results are one shot per load per barrier and are not a statistical sample. Results vary with barrel length, load and conditions. © Velocitas Bullet Systems LLC. Provided for evaluation.

CHRONOGRAPH RECORD

Tables 5 and 6 — The chronograph record for 2026-03-04, in the order fired. Individual shot velocities in fps. Nothing is averaged away. Warm-up strings are not included.

TABLE 5 · 11.5″ DUTY RIFLE

LOAD	1	2	3	4	AVG	SD	ES
Speer Gold Dot 75 gr	2262.0	2300.5	2265.2	2274.2	**2275.5**	15.1	38.5
Federal 69 gr Tac Tip	2431.4	2424.8	2452.1	—	**2436.1**	11.6	27.3
Velocitas VX223 60 gr	**2497.6**	**2517.2**	**2519.7**	**2506.2**	2510.2	**8.8**	**22.1**
Federal 77 gr	2208.7	2177.0	2211.0	2214.1	**2202.7**	15.0	37.1
Federal 77 gr Sierra	2283.8	2306.4	2274.3	—	**2288.2**	13.5	32.1

TABLE 6 · 14.5″ DESIGNATED MARKSMAN RIFLE

LOAD	1	2	3	4	AVG	SD	ES
Federal 69 gr Tac Tip	2715.1	—	—	—	**2715.1**	—	—
Federal 77 gr Sierra	2460.4	2494.1	2482.9	—	**2479.1**	14.0	33.7
Federal 77 gr	2447.8	2389.1	2445.4	2364.2	**2411.6**	36.1	83.5
Velocitas VX223 60 gr	**2721.4**	**2691.7**	**2736.6**	**—**	2716.6	**18.7**	**45.0**
Speer Gold Dot 75 gr	2460.7	2502.1	2474.7	2473.1	**2477.7**	15.1	41.4
PMC X-Tac Match 77 gr	2444.6	2417.6	2392.3	—	**2418.1**	21.4	52.3

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TARGET RECORD

Figures 2 and 3 — The two target boards from 2026-03-04, one per rifle. Groups were measured on paper; the measured figures are in the Group column of Tables 1 and 2, and the **Target** column there names the position of each load on these boards. **The Velocitas group is the bottom-left target on both.**



Figure 2 — 11.5″ duty rifle. Five loads, one 5-shot group each at 100 yards. The sixth position was not used.



Figure 3 — 14.5″ rifle. Six loads, one 5-shot group each at 100 yards.

Single-day test. Velocity figures are from the chronograph record for the strings named; group sizes were measured on paper. Terminal results are one shot per load per barrier and are not a statistical sample. Results vary with barrel length, load and conditions. © Velocitas Bullet Systems LLC. Provided for evaluation.