

.308 Win., Barnes TTSX (130 gr.) Vectan SP 11

WARNING: Since we have no control over equipment or data which may be used with this program, no responsibility is implied or assumed for results obtained through its use. Input data and results may be incorrect or wrong. Therefore the use of this data for loading ammunition can cause serious injury to personnel and material. The computer-results had to be checked against data available in current loading manuals.

LOT-TO-LOT VARIATIONS OF POWDERS, PRIMER SUBSTITUTION AND COMPONENT CHANGE OFTEN RAISE PRESSURES TO UNSAFE LEVELS. THE USER MUST ASSUME THE ENTIRE RISK OF USING THIS DATA FOR LOADING PURPOSES.

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User Data:**Date:**3-sep-2013**Time:**21:11:33 **File:** *.dat**Cartridge / Caliber****.308 Win.****Bullet****.308, 130, Barnes 'TTSX'BT 3**

Maximum Average Pressure, allowed

4150 bar

60191 psi. (Piezo CIP)

with boattail

Groove Caliber

7,82 mm

0,308 in.

Bullet Weight

8,42 gm

130,0 gr.

Case Capacity, overflow

3,552 cm³

54,71 gr. H2O

Bullet Length

30,2 mm

1,189 in.

Case Length

51,16 mm

2,014 in.

Bullet Seating Depth

9,78 mm

0,385 in.

Cartridge O.A. Length

71,58 mm

2,818 in.

Barrel/Tube Length

577,09 mm

22,7201 in.

Shot Start / Init Pressure

300,0 bar

4351 psi.

Cross Section Area of Bore

0,4751 cm²0,07364 in.²**Propellant type****SNPE Vectan SP 11**

Charge Weight

3,162 gm

48,8 gr.

Load Density

1,021 gm/cm³258,2 gr./in.³

Heat of Explosion, Potential

3910 J/gm

253,4 J/gr.

Energy Density of Charge

3991 J/cm³65401 J/in.³

Propellant Solid Density

1,64 gm/cm³414,74 gr./in.³

Used Ratio of Specific Heats cp/cv

1,2305

Burning Rate Factor Ba

0,522 1/s

Weighting Factor

0,5

Burning Function Limit Z1

0,515

Prog.-/ Degressivity Factor a0

0,7

Factor b

1,676

Bulk Density

0,950 gm/cm³240,2 gr./in.³**Calculated and Estimated Data:**

Bullet Shank Seating Depth

6,61 mm

0,26 in.

Capacity Displaced by Seated Bullet

0,454 cm³0,0277 in.³

Useable Case Capacity

3,098 cm³0,1891 in.³

Bullet Travel at Muzzle Exit

535,71 mm

21,09 in.

Loading Ratio("Density") / Filling

107.4 % = compressed

Charge Fraction Burnt at Shot Start

1,23 %

Predicted Data:

Maximum Chamber Pressure

3517 bar**51014 psi.**

Bullet Travel at Pmax

30,6 mm

1,21 in.

at Muzzle Exit:

Bullet Velocity

896,9 m/s**2942 fps.**

Pressure at Muzzle

555 bar

8052 psi.

Bullet Energy

3389 Joule

2499 ft.lbs.

Bullet Barrel Time

1,044 ms

Propellant Burnt

94,1 %

Ballistic Efficiency

27,4 %

Check Loading Manuals for Safe Minimum Charge Weight to Avoid Hazardous Ignition Conditions like Secondary Explosion Effects !

Real maximum (peak) of pressure is reached while bullet moves within barrel.

End of combustion occurs after the bullet's base passes muzzle.

