

.308 Win., Barnes TTSX (130 gr.) IMR 3031 (TUBAL 3000)

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:**21:18:46 **File:** *.dat**Cartridge / Caliber****.308 Win.****Bullet****.308, 130, Barnes 'TTSX'BT 3**

Maximum Average Pressure, allowed
Groove Caliber
Case Capacity, overflow
Case Length
Cartridge O.A. Length
Shot Start / Init Pressure

4150 bar
7,82 mm
3,552 cm³
51,16 mm
71,58 mm
300,0 bar

60191 psi. (Piezo CIP)
0,308 in.
54,71 gr. H₂O
2,014 in.
2,818 in.
4351 psi.

Bullet Weight
Bullet Length
Bullet Seating Depth
Barrel/Tube Length
Cross Section Area of Bore

with boattail
8,42 gm 130,0 gr.
30,2 mm 1,189 in.
9,78 mm 0,385 in.
577,09 mm 22,7201 in.
0,4751 cm² 0,07364 in.²

Propellant type**IMR 3031**

Charge Weight
Heat of Explosion, Potential
Propellant Solid Density
Burning Rate Factor Ba
Burning Function Limit Z1
Factor b

2,799 gm 43,2 gr.
3880 J/gm 251,4 J/gr.
1,58 gm/cm³ 399,57 gr./in.³
0,577 1/s
0,548
1,93

Load Density
Energy Density of Charge
Used Ratio of Specific Heats cp/cv
Weighting Factor
Prog.-/ Degressivity Factor a0
Bulk Density

0,905 gm/cm³ 228,9 gr./in.³
3506 J/cm³ 57453 J/in.³
1,243
0,5
1,249
0,860 gm/cm³ 217,5 gr./in.³

Calculated and Estimated Data:

Bullet Shank Seating Depth
Useable Case Capacity
Loading Ratio("Density") / Filling

6,61 mm 0,26 in.
3,098 cm³ 0,1891 in.³
105.1 % = compressed

Capacity Displaced by Seated Bullet
Bullet Travel at Muzzle Exit
Charge Fraction Burnt at Shot Start

0,454 cm³ 0,0277 in.³
535,71 mm 21,09 in.
1,51 %

Predicted Data:**Maximum Chamber Pressure****3514 bar 50966 psi.****Bullet Travel at Pmax****39,0 mm 1,53 in.****at Muzzle Exit:**

Bullet Velocity
Bullet Energy
Propellant Burnt

906,9 m/s 2976 fps.
3465 Joule 2556 ft.lbs.
99,7 %

Pressure at Muzzle
Bullet Barrel Time
Ballistic Efficiency

528 bar 7664 psi.
1,044 ms
31,9 %

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.

