User Data:

Date:9-Apr-2015 **Time:17:38:44** **File: xpert 308 win 130gr.dat**

Cartridge / Caliber	**.308 Win.**		**Bullet**	**.308, 130GR XPERT TARGET**	
Maximum Average Pressure, allowed	60191 psi.	4150 bar (Piezo CIP)		with flatbase	
Groove Caliber	0.308 in.	7.82 mm	Bullet Weight	130.0 gr.	8.42 gm
Case Capacity, overflow	56.0 gr. H2O	3.636 cm³	Bullet Length	1.236 in.	31.4 mm
Case Length	2.014 in.	51.16 mm	Bullet Seating Depth	0.534 in.	13.56 mm
Cartridge O.A. Length	2.717 in.	69.0 mm	Barrel/Tube Length	24.0 in.	609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.07364 in.²	0.4751 cm²
Propellant type	**Somchem S341**				
Charge Weight	45.0 gr.	2.916 gm	Load Density	247.3 gr./in.³	0.978 gm/cm³
Heat of Explosion, Potential	237.2 J/gr.	3660 J/gm	Energy Density of Charge	58633 J/in.³	3578 J/cm³
Propellant Solid Density	409.68 gr./in.³	1.62 gm/cm³	Used Ratio of Specific Heats cp/cv	1.242	
Burning Rate Factor Ba	0.56 1/s		Weighting Factor	0.5	
Burning Function Limit Z1	0.45		Prog.-/ Degressivity Factor a0	0.74	
Factor b	1.557		Bulk Density	250.4 gr./in.³	0.990 gm/cm³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.534 in.	13.56 mm	Capacity Displaced by Seated Bullet	0.0398 in.³	0.653 cm³
Useable Case Capacity	0.1821 in.³	2.983 cm³	Bullet Travel at Muzzle Exit	22.52 in.	572.0 mm
Loading Ratio("Density") / Filling	98.7 %		Charge Fraction Burnt at Shot Start	1.15 %	
Predicted Data:					
Maximum Chamber Pressure	46507 psi.	3207 bar	Bullet Travel at Pmax	1.24 in.	31.4 mm
at Muzzle Exit:					
Bullet Velocity	2821 fps.	860.0 m/s	Pressure at Muzzle	6627 psi.	457 bar
Bullet Energy	2298 ft.lbs.	3116 Joule	Bullet Barrel Time	1.138 ms	
Propellant Burnt	93.0 %		Ballistic Efficiency	29.2 %	

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.