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**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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<b>User Data:</b>	<b>Date:9-Apr-2015</b>	<b>Time:17:45:26</b>	<b>File: xpert 308 win 130gr.dat</b>	
<b>Cartridge / Caliber</b>	<b>.308 Win.</b>	<b>Bullet</b>	<b>.308, 130GR XPERT TARGET</b>	
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 cm <sup>3</sup>	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.	69.01 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. <sup>2</sup> 0.4751 cm <sup>2</sup>
<b>Propellant type</b>	<b>Somchem S321</b>			
Charge Weight	43.0 gr.	2.786 gm	Load Density	236.2 gr./in. <sup>3</sup> 0.934 gm/cm <sup>3</sup>
Heat of Explosion, Potential	259.8 J/gr.	4010 J/gm	Energy Density of Charge	61370 J/in. <sup>3</sup> 3745 J/cm <sup>3</sup>
Propellant Solid Density	409.68 gr./in. <sup>3</sup>	1.62 gm/cm <sup>3</sup>	Used Ratio of Specific Heats cp/cv	1.221
Burning Rate Factor Ba	0.56 1/s		Weighting Factor	0.5
Burning Function Limit Z1	0.39		Prog.-/ Degressivity Factor a0	1.649
Factor b	1.641		Bulk Density	250.4 gr./in. <sup>3</sup> 0.990 gm/cm <sup>3</sup>

**Calculated and Estimated Data:**

Bullet Shank Seating Depth	0.534 in.	13.56 mm	Capacity Displaced by Seated Bullet	0.0398 in. <sup>3</sup> 0.653 cm <sup>3</sup>
Useable Case Capacity	0.1821 in. <sup>3</sup>	2.983 cm <sup>3</sup>	Bullet Travel at Muzzle Exit	22.52 in. 572.0 mm
Loading Ratio("Density") / Filling	94.3 %		Charge Fraction Burnt at Shot Start	1.28 %

**Predicted Data:**

Maximum Chamber Pressure	45610 psi.	3145 bar	Bullet Travel at Pmax	1.40 in. 35.5 mm
<b>at Muzzle Exit:</b>				
Bullet Velocity	2827 fps.	861.8 m/s	Pressure at Muzzle	6773 psi. 467 bar
Bullet Energy	2308 ft.lbs.	3129 Joule	Bullet Barrel Time	1.155 ms
Propellant Burnt	95.3 %		Ballistic Efficiency	28.0 %

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.

