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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:17:43:50</b>	<b>File: xpert 308 norma mag 130gr.dat</b>	
<b>Cartridge / Caliber</b>	<b>.308 Norma Mag.</b>	<b>Bullet</b>	<b>.308, 130GR XPERT TARGET</b>	
Maximum Average Pressure, allowed	63817 psi.	4400 bar (Piezo CIP)	with flatbase	
Groove Caliber	0.308 in.	7.82 mm	Bullet Weight	130.0 gr. 8.42 gm
Case Capacity, overflow	86.49 gr. H2O	5.616 cm <sup>3</sup>	Bullet Length	1.236 in. 31.4 mm
Case Length	2.559 in.	65.0 mm	Bullet Seating Depth	0.534 in. 13.56 mm
Cartridge O.A. Length	3.261 in.	82.84 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 S355</b>			
Charge Weight	63.0 gr.	4.082 gm	Load Density	207.9 gr./in. <sup>3</sup> 0.822 gm/cm <sup>3</sup>
Heat of Explosion, Potential	253.4 J/gr.	3910 J/gm	Energy Density of Charge	52701 J/in. <sup>3</sup> 3216 J/cm <sup>3</sup>
Propellant Solid Density	404.63 gr./in. <sup>3</sup>	1.6 gm/cm <sup>3</sup>	Used Ratio of Specific Heats cp/cv	1.2291
Burning Rate Factor Ba	0.5 1/s		Weighting Factor	0.5
Burning Function Limit Z1	0.39		Prog.-/ Degressivity Factor a0	2.36
Factor b	1.774		Bulk Density	227.6 gr./in. <sup>3</sup> 0.900 gm/cm <sup>3</sup>

**Calculated and Estimated Data:**

Bullet Shank Seating Depth	0.534 in.	13.56 mm	Capacity Displaced by Seated Bullet	0.0399 in. <sup>3</sup> 0.653 cm <sup>3</sup>
Useable Case Capacity	0.3029 in. <sup>3</sup>	4.963 cm <sup>3</sup>	Bullet Travel at Muzzle Exit	21.97 in. 558.16 mm
Loading Ratio("Density") / Filling	91.4 %		Charge Fraction Burnt at Shot Start	1.65 %

**Predicted Data:**

Maximum Chamber Pressure	49178 psi.	3391 bar	Bullet Travel at Pmax	2.35 in. 59.6 mm
<b>at Muzzle Exit:</b>				
Bullet Velocity	3160 fps.	963.3 m/s	Pressure at Muzzle	10130 psi. 698 bar
Bullet Energy	2883 ft.lbs.	3909 Joule	Bullet Barrel Time	1.134 ms
Propellant Burnt	99.0 %		Ballistic Efficiency	24.5 %

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.

