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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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<b>User Data:</b>	<b>Date:9-Apr-2015</b>	<b>Time:14:24:57</b>	<b>File: xpert 7mm rem ultra mag 108gr.dat</b>	
<b>Cartridge / Caliber</b>	<b>7 mm Rem Ultra Mag</b>	<b>Bullet</b>	<b>.284, 108, XPERT TARGET M</b>	
Maximum Average Pressure, allowed	63817 psi.	4400 bar (Piezo CIP)	with flatbase	
Groove Caliber	0.284 in.	7.21 mm	Bullet Weight	108.0 gr. 7.0 gm
Case Capacity, overflow	112.0 gr. H2O	7.272 cm <sup>3</sup>	Bullet Length	1.189 in. 30.2 mm
Case Length	2.850 in.	72.39 mm	Bullet Seating Depth	0.535 in. 13.59 mm
Cartridge O.A. Length	3.504 in.	89.0 mm	Barrel/Tube Length	28.0 in. 711.2 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.0626 in. <sup>2</sup> 0.4039 cm <sup>2</sup>
<b>Propellant type</b>	<b>Somchem S385</b>			
Charge Weight	80.0 gr.	5.184 gm	Load Density	195.2 gr./in. <sup>3</sup> 0.772 gm/cm <sup>3</sup>
Heat of Explosion, Potential	238.5 J/gr.	3680 J/gm	Energy Density of Charge	46556 J/in. <sup>3</sup> 2841 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	1.239
Burning Rate Factor Ba	0.405 1/s		Weighting Factor	0.7
Burning Function Limit Z1	0.42		Prog.-/ Degressivity Factor a0	2.206
Factor b	1.823		Bulk Density	235.2 gr./in. <sup>3</sup> 0.930 gm/cm <sup>3</sup>

**Calculated and Estimated Data:**

Bullet Shank Seating Depth	0.535 in.	13.59 mm	Capacity Displaced by Seated Bullet	0.034 in. <sup>3</sup> 0.557 cm <sup>3</sup>
Useable Case Capacity	0.4098 in. <sup>3</sup>	6.715 cm <sup>3</sup>	Bullet Travel at Muzzle Exit	25.69 in. 652.4 mm
Loading Ratio("Density") / Filling	83.0 %		Charge Fraction Burnt at Shot Start	1.91 %

**Predicted Data:**

Maximum Chamber Pressure	48620 psi.	3352 bar	Bullet Travel at Pmax	3.72 in. 94.4 mm
<b>at Muzzle Exit:</b>				
Bullet Velocity	3308 fps.	1008.2 m/s	Pressure at Muzzle	10402 psi. 717 bar
Bullet Energy	2624 ft.lbs.	3557 Joule	Bullet Barrel Time	1.360 ms
Propellant Burnt	99.5 %		Ballistic Efficiency	18.6 %

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.

