User Data:

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Cartridge / Caliber	**.308 Norma Mag.**		**Bullet**	**.308, 130GR XPERT TARGET**	
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 cm³	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.²	0.4751 cm²
Propellant type	**Somchem S365**				
Charge Weight	70.0 gr.	4.536 gm	Load Density	231.1 gr./in.³	0.914 gm/cm³
Heat of Explosion, Potential	238.8 J/gr.	3685 J/gm	Energy Density of Charge	55192 J/in.³	3368 J/cm³
Propellant Solid Density	404.63 gr./in.³	1.6 gm/cm³	Used Ratio of Specific Heats cp/cv	1.239	
Burning Rate Factor Ba	0.44 1/s		Weighting Factor	0.5	
Burning Function Limit Z1	0.605		Prog.-/ Degressivity Factor a0	1.715	
Factor b	2.271		Bulk Density	231.4 gr./in.³	0.915 gm/cm³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.534 in.	13.56 mm	Capacity Displaced by Seated Bullet	0.0399 in.³	0.653 cm³
Useable Case Capacity	0.3029 in.³	4.963 cm³	Bullet Travel at Muzzle Exit	21.97 in.	558.16 mm
Loading Ratio("Density") / Filling	99.9 %		Charge Fraction Burnt at Shot Start	1.33 %	
Predicted Data:					
Maximum Chamber Pressure	48544 psi.	3347 bar	Bullet Travel at Pmax	2.79 in.	70.9 mm
at Muzzle Exit:					
Bullet Velocity	3257 fps.	992.6 m/s	Pressure at Muzzle	10887 psi.	751 bar
Bullet Energy	3061 ft.lbs.	4150 Joule	Bullet Barrel Time	1.119 ms	
Propellant Burnt	99.8 %		Ballistic Efficiency	24.8 %	

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.