User Data:

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Cartridge / Caliber	**.338 Win Mag.**		**Bullet**	**.338, 185, XPERT TARGET M**	
Maximum Average Pressure, allowed	62366 psi.	4300 bar (Piezo CIP)		with flatbase	
Groove Caliber	0.338 in.	8.59 mm	Bullet Weight	185.0 gr.	11.99 gm
Case Capacity, overflow	86.0 gr. H2O	5.584 cm³	Bullet Length	1.441 in.	36.6 mm
Case Length	2.500 in.	63.5 mm	Bullet Seating Depth	0.634 in.	16.1 mm
Cartridge O.A. Length	3.307 in.	84.0 mm	Barrel/Tube Length	26.0 in.	660.4 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.08827 in.²	0.5695 cm²
Propellant type	**Somchem S365**				
Charge Weight	67.99 gr.	4.406 gm	Load Density	239.7 gr./in.³	0.948 gm/cm³
Heat of Explosion, Potential	238.8 J/gr.	3685 J/gm	Energy Density of Charge	57224 J/in.³	3492 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	0.634 in.	16.1 mm	Capacity Displaced by Seated Bullet	0.0571 in.³	0.935 cm³
Useable Case Capacity	0.2837 in.³	4.649 cm³	Bullet Travel at Muzzle Exit	24.13 in.	613.0 mm
Loading Ratio("Density") / Filling	103.6 % = compressed		Charge Fraction Burnt at Shot Start	1.22 %	
Predicted Data:					
Maximum Chamber Pressure	46367 psi.	3197 bar	Bullet Travel at Pmax	1.97 in.	50.1 mm
at Muzzle Exit:					
Bullet Velocity	2937 fps.	895.2 m/s	Pressure at Muzzle	8367 psi.	577 bar
Bullet Energy	3544 ft.lbs.	4805 Joule	Bullet Barrel Time	1.259 ms	
Propellant Burnt	99.8 %		Ballistic Efficiency	29.6 %	

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.