User Data:

Date:9-Apr-2015 **Time:19:56:37** **File: xpert 375 ruger 210gr.dat**

Cartridge / Caliber	**.375 Ruger**		**Bullet**	**.375, 210, XPERT TARGET M**	
Maximum Average Pressure, allowed	62004 psi.	4275 bar (Piezo CIP)		with flatbase	
Groove Caliber	0.375 in.	9.53 mm	Bullet Weight	210.0 gr.	13.61 gm
Case Capacity, overflow	99.0 gr. H2O	6.428 cm³	Bullet Length	1.287 in.	32.7 mm
Case Length	2.572 in.	65.33 mm	Bullet Seating Depth	0.552 in.	14.02 mm
Cartridge O.A. Length	3.307 in.	84.0 mm	Barrel/Tube Length	24.0 in.	609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.10875 in.²	0.7016 cm²
Propellant type	**Somchem S321**				
Charge Weight	70.0 gr.	4.536 gm	Load Density	211.4 gr./in.³	0.836 gm/cm³
Heat of Explosion, Potential	259.8 J/gr.	4010 J/gm	Energy Density of Charge	54929 J/in.³	3352 J/cm³
Propellant Solid Density	409.68 gr./in.³	1.62 gm/cm³	Used Ratio of Specific Heats cp/cv	1.221	
Burning Rate Factor Ba	0.56 1/s		Weighting Factor	0.65	
Burning Function Limit Z1	0.39		Prog.-/ Degressivity Factor a0	1.649	
Factor b	1.641		Bulk Density	250.4 gr./in.³	0.990 gm/cm³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.552 in.	14.02 mm	Capacity Displaced by Seated Bullet	0.0611 in.³	1.001 cm³
Useable Case Capacity	0.3312 in.³	5.427 cm³	Bullet Travel at Muzzle Exit	21.98 in.	558.29 mm
Loading Ratio("Density") / Filling	84.4 %		Charge Fraction Burnt at Shot Start	1.63 %	
Predicted Data:					
Maximum Chamber Pressure	45825 psi.	3160 bar	Bullet Travel at Pmax	1.73 in.	44.0 mm
at Muzzle Exit:					
Bullet Velocity	2758 fps.	840.6 m/s	Pressure at Muzzle	7616 psi.	525 bar
Bullet Energy	3547 ft.lbs.	4809 Joule	Bullet Barrel Time	1.216 ms	
Propellant Burnt	98.5 %		Ballistic Efficiency	26.4 %	

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.