User Data:

Date:9-Apr-2015 **Time:18:25:56** **File: xpert 8 x 64mm 153gr.dat**

Cartridge / Caliber	**8 x 64 S**		**Bullet**	**.323, 153GR XPERT TARGET**	
Maximum Average Pressure, allowed	58740 psi.	4050 bar (Piezo CIP)		with flatbase	
Groove Caliber	0.323 in.	8.2 mm	Bullet Weight	153.0 gr.	9.91 gm
Case Capacity, overflow	69.51 gr. H2O	4.513 cm³	Bullet Length	1.299 in.	33.0 mm
Case Length	2.520 in.	64.01 mm	Bullet Seating Depth	0.512 in.	13.01 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	0.08026 in.²	0.5178 cm²
Propellant type	**Somchem S355**				
Charge Weight	52.0 gr.	3.37 gm	Load Density	222.8 gr./in.³	0.881 gm/cm³
Heat of Explosion, Potential	253.4 J/gr.	3910 J/gm	Energy Density of Charge	56470 J/in.³	3446 J/cm³
Propellant Solid Density	404.63 gr./in.³	1.6 gm/cm³	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.³	0.900 gm/cm³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.512 in.	13.01 mm	Capacity Displaced by Seated Bullet	0.0421 in.³	0.689 cm³
Useable Case Capacity	0.2333 in.³	3.824 cm³	Bullet Travel at Muzzle Exit	21.99 in.	558.6 mm
Loading Ratio("Density") / Filling	97.9 %		Charge Fraction Burnt at Shot Start	1.42 %	
Predicted Data:					
Maximum Chamber Pressure	43562 psi.	3003 bar	Bullet Travel at Pmax	1.75 in.	44.6 mm
at Muzzle Exit:					
Bullet Velocity	2783 fps.	848.2 m/s	Pressure at Muzzle	7860 psi.	542 bar
Bullet Energy	2631 ft.lbs.	3567 Joule	Bullet Barrel Time	1.209 ms	
Propellant Burnt	96.0 %		Ballistic Efficiency	27.1 %	

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.