User Data:

Date:9-Apr-2015 **Time:18:17:45** **File: xpert 8 x 60mm 153gr.dat**

Cartridge / Caliber	**8 x 60 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	63.99 gr. H2O	4.155 cm³	Bullet Length	1.299 in.	33.0 mm
Case Length	2.362 in.	59.99 mm	Bullet Seating Depth	0.590 in.	14.99 mm
Cartridge O.A. Length	3.071 in.	78.0 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 S335**				
Charge Weight	44.0 gr.	2.851 gm	Load Density	214.5 gr./in.³	0.848 gm/cm³
Heat of Explosion, Potential	240.4 J/gr.	3710 J/gm	Energy Density of Charge	51570 J/in.³	3147 J/cm³
Propellant Solid Density	407.15 gr./in.³	1.61 gm/cm³	Used Ratio of Specific Heats cp/cv	1.224	
Burning Rate Factor Ba	0.624 1/s		Weighting Factor	0.5	
Burning Function Limit Z1	0.35		Prog.-/ Degressivity Factor a0	2.299	
Factor b	1.666		Bulk Density	227.6 gr./in.³	0.900 gm/cm³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.59 in.	14.99 mm	Capacity Displaced by Seated Bullet	0.0485 in.³	0.794 cm³
Useable Case Capacity	0.2051 in.³	3.361 cm³	Bullet Travel at Muzzle Exit	22.23 in.	564.6 mm
Loading Ratio("Density") / Filling	94.3 %		Charge Fraction Burnt at Shot Start	1.68 %	
Predicted Data:					
Maximum Chamber Pressure	43753 psi.	3017 bar	Bullet Travel at Pmax	1.41 in.	35.7 mm
at Muzzle Exit:					
Bullet Velocity	2644 fps.	806.0 m/s	Pressure at Muzzle	6243 psi.	430 bar
Bullet Energy	2375 ft.lbs.	3220 Joule	Bullet Barrel Time	1.225 ms	
Propellant Burnt	98.8 %		Ballistic Efficiency	30.4 %	

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.