User Data:

Date:8-Apr-2015 **Time:22:49:50** **File: xpert 6.5 x 64mm bren 98gr.dat**

Cartridge / Caliber	**6.5 x 64 Brenneke**		**Bullet**	**.264, 98, XPERT**	
Maximum Average Pressure, allowed	62366 psi.	4300 bar (Piezo CIP)		with flatbase	
Groove Caliber	0.264 in.	6.71 mm	Bullet Weight	98.0 gr.	6.35 gm
Case Capacity, overflow	67.0 gr. H2O	4.35 cm³	Bullet Length	1.240 in.	31.5 mm
Case Length	2.540 in.	64.52 mm	Bullet Seating Depth	0.552 in.	14.02 mm
Cartridge O.A. Length	3.228 in.	82.0 mm	Barrel/Tube Length	24.0 in.	609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.05351 in.²	0.3452 cm²
Propellant type	**Somchem S365**				
Charge Weight	52.0 gr.	3.37 gm	Load Density	221.3 gr./in.³	0.875 gm/cm³
Heat of Explosion, Potential	238.8 J/gr.	3685 J/gm	Energy Density of Charge	52816 J/in.³	3223 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	0.552 in.	14.02 mm	Capacity Displaced by Seated Bullet	0.0303 in.³	0.497 cm³
Useable Case Capacity	0.2351 in.³	3.853 cm³	Bullet Travel at Muzzle Exit	22.01 in.	559.1 mm
Loading Ratio("Density") / Filling	95.6 %		Charge Fraction Burnt at Shot Start	1.47 %	
Predicted Data:					
Maximum Chamber Pressure	47449 psi.	3271 bar	Bullet Travel at Pmax	3.21 in.	81.6 mm
at Muzzle Exit:					
Bullet Velocity	3205 fps.	976.9 m/s	Pressure at Muzzle	11166 psi.	770 bar
Bullet Energy	2235 ft.lbs.	3030 Joule	Bullet Barrel Time	1.161 ms	
Propellant Burnt	99.9 %		Ballistic Efficiency	24.4 %	

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.