User Data:

Date:9-Apr-2015 **Time:14:35:16** **File: xpert 7 x 64mm bren 108gr.dat**

Cartridge / Caliber	**7 x 64 Brenneke**		**Bullet**	**.284, 108, XPERT TARGET M**	
Maximum Average Pressure, allowed	60191 psi.	4150 bar (Piezo CIP)		with flatbase	
Groove Caliber	0.285 in.	7.24 mm	Bullet Weight	108.0 gr.	7.0 gm
Case Capacity, overflow	69.0 gr. H2O	4.48 cm³	Bullet Length	1.189 in.	30.2 mm
Case Length	2.519 in.	63.98 mm	Bullet Seating Depth	0.519 in.	13.18 mm
Cartridge O.A. Length	3.189 in.	81.0 mm	Barrel/Tube Length	24.0 in.	609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.06245 in.²	0.4029 cm²
Propellant type	**Somchem S341**				
Charge Weight	50.0 gr.	3.24 gm	Load Density	208.1 gr./in.³	0.823 gm/cm³
Heat of Explosion, Potential	237.2 J/gr.	3660 J/gm	Energy Density of Charge	49374 J/in.³	3013 J/cm³
Propellant Solid Density	409.68 gr./in.³	1.62 gm/cm³	Used Ratio of Specific Heats cp/cv	1.242	
Burning Rate Factor Ba	0.56 1/s		Weighting Factor	0.5	
Burning Function Limit Z1	0.45		Prog.-/ Degressivity Factor a0	0.74	
Factor b	1.557		Bulk Density	250.4 gr./in.³	0.990 gm/cm³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.519 in.	13.18 mm	Capacity Displaced by Seated Bullet	0.0332 in.³	0.544 cm³
Useable Case Capacity	0.2402 in.³	3.936 cm³	Bullet Travel at Muzzle Exit	22.0 in.	558.8 mm
Loading Ratio("Density") / Filling	83.1 %		Charge Fraction Burnt at Shot Start	1.69 %	
Predicted Data:					
Maximum Chamber Pressure	44097 psi.	3040 bar	Bullet Travel at Pmax	2.15 in.	54.7 mm
at Muzzle Exit:					
Bullet Velocity	3028 fps.	923.0 m/s	Pressure at Muzzle	9115 psi.	628 bar
Bullet Energy	2199 ft.lbs.	2981 Joule	Bullet Barrel Time	1.164 ms	
Propellant Burnt	96.8 %		Ballistic Efficiency	25.1 %	

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.