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WARNING: Since we have no control over equipment or data which may be used with this program, no responsibility is implied or assumed for results obtained through its use. Input data and results may be incorrect or wrong. Therefore the use of this data for loading ammunition can cause serious injury to personnel and material. The computer-results had to be checked against data available in current loading manuals.

LOT-TO-LOT VARIATIONS OF POWDERS, PRIMER SUBSTITUTION AND COMPONENT CHANGE OFTEN RAISE PRESSURES TO UNSAFE LEVELS. THE USER MUST ASSUME THE ENTIRE RISK OF USING THIS DATA FOR LOADING PURPOSES.

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|-----------------------------------|-----------------------------|-------------------------|---------------------------------------|---|
| User Data: | Date:9-Apr-2015 | Time:18:20:08 | 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 cm ³ | 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 cm ² |
| Propellant type | Somchem S321 | | | |
| Charge Weight | 47.0 gr. | 3.046 gm | Load Density | 229.1 gr./in. ³ 0.906 gm/cm ³ |
| Heat of Explosion, Potential | 259.8 J/gr. | 4010 J/gm | Energy Density of Charge | 59551 J/in. ³ 3634 J/cm ³ |
| Propellant Solid Density | 409.68 gr./in. ³ | 1.62 gm/cm ³ | Used Ratio of Specific Heats cp/cv | 1.221 |
| Burning Rate Factor Ba | 0.56 1/s | | Weighting Factor | 0.5 |
| 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/cm ³ |

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 cm ³ |
| Useable Case Capacity | 0.2051 in. ³ | 3.361 cm ³ | Bullet Travel at Muzzle Exit | 22.23 in. | 564.6 mm |
| Loading Ratio("Density") / Filling | 91.5 % | | Charge Fraction Burnt at Shot Start | 1.37 % | |

Predicted Data:

| | | | | | |
|--------------------------|--------------|------------|-----------------------|-----------|---------|
| Maximum Chamber Pressure | 45940 psi. | 3167 bar | Bullet Travel at Pmax | 1.45 in. | 36.8 mm |
| at Muzzle Exit: | | | | | |
| Bullet Velocity | 2751 fps. | 838.4 m/s | Pressure at Muzzle | 7043 psi. | 486 bar |
| Bullet Energy | 2570 ft.lbs. | 3485 Joule | Bullet Barrel Time | 1.183 ms | |
| Propellant Burnt | 96.6 % | | Ballistic Efficiency | 28.5 % | |

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.

