

5744 28gr

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:**22-mai-2023**Time:**20:52:39**File:** 5744 20gr.dat**Cartridge / Caliber****.577 Sld. Snider****Bullet****.58, 505, LYM LFN MINIE 575**

Maximum Average Pressure, allowed

21756 psi. 1500 bar (Piezo CIP)

with flatbase

505,0 gr.

32,72 gm

Groove Caliber

0,574 in. 14,58 mm

Bullet Weight

1,080 in. 27,43 mm

Case Capacity, overflow

114,0 gr. H₂O 7,402 cm³

Bullet Length

0,610 in. 15,49 mm

Case Length

2,000 in. 50,8 mm

Bullet Seating Depth

30,0 in. 762,0 mm

Cartridge O.A. Length

2,470 in. 62,74 mm

Barrel/Tube Length

0,25933 in.² 1,6731 cm²

Shot Start / Init Pressure

1160 psi. 80,0 bar

Cross Section Area of Bore

Propellant type**Accurate 5744**

Charge Weight

28,0 gr. 1,814 gm

Load Density

95,3 gr./in.³ 0,377 gm/cm³

Heat of Explosion, Potential

305,4 J/gr. 4713 J/gm

Energy Density of Charge

29120 J/in.³ 1777 J/cm³

Propellant Solid Density

397,04 gr./in.³ 1,57 gm/cm³

Used Ratio of Specific Heats cp/cv

1,211

Burning Rate Factor Ba

1,11 1/s

Weighting Factor

0,7

Burning Function Limit Z1

0,119

Prog.-/ Degressivity Factor a0

-0,175

Factor b

1,054

Bulk Density

222,5 gr./in.³ 0,880 gm/cm³**Calculated and Estimated Data:**

Bullet Shank Seating Depth

0,61 in. 15,49 mm

Capacity Displaced by Seated Bullet

0,1581 in.³ 2,591 cm³

Useable Case Capacity

0,2936 in.³ 4,811 cm³

Bullet Travel at Muzzle Exit

28,61 in. 726,69 mm

Loading Ratio("Density") / Filling

42,8 %

Charge Fraction Burnt at Shot Start

1,62 %

Predicted Data:

Maximum Chamber Pressure

7544 psi. 520 bar

Bullet Travel at Pmax

0,76 in. 19,4 mm

at Muzzle Exit:

Bullet Velocity

1114 fps. 339,6 m/s

Pressure at Muzzle

870 psi. 60 bar

Bullet Energy

1392 ft.lbs. 1887 Joule

Bullet Barrel Time

3,347 ms

Propellant Burnt

66,1 %

Ballistic Efficiency

22,1 %

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.

