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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 personnell 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:**19-mai-2023**Time:**22:55:46 **File:** *.dat**Cartridge / Caliber****.577 Sld. Snider****Bullet****.58, 400, LYM LFN MINIE 575**

Maximum Average Pressure, allowed

21756 psi. 1500 bar (Piezo CIP)

with flatbase

Groove Caliber

0,574 in. 14,58 mm

Bullet Weight

400,0 gr. 25,92 gm

Case Capacity, overflow

114,0 gr. H₂O 7,402 cm³

Bullet Length

0,930 in. 23,62 mm

Case Length

2,000 in. 50,8 mm

Bullet Seating Depth

0,460 in. 11,68 mm

Cartridge O.A. Length

2,470 in. 62,74 mm

Barrel/Tube Length

26,0 in. 660,4 mm

Shot Start / Init Pressure

1160 psi. 80,0 bar

Cross Section Area of Bore

0,25933 in.² 1,6731 cm²**Propellant type****Vihtavuori N32C Tin Star**

Charge Weight

19,0 gr. 1,231 gm

Load Density

57,2 gr./in.³ 0,226 gm/cm³

Heat of Explosion, Potential

197,0 J/gr. 3040 J/gm

Energy Density of Charge

11258 J/in.³ 0687 J/cm³

Propellant Solid Density

376,81 gr./in.³ 1,49 gm/cm³

Used Ratio of Specific Heats cp/cv

1,2354

Burning Rate Factor Ba

3,463 1/s

Weighting Factor

0,7

Burning Function Limit Z1

0,513

Prog.-/ Degressivity Factor a0

2,894

Factor b

2,259

Bulk Density

116,1 gr./in.³ 0,459 gm/cm³**Calculated and Estimated Data:**

Bullet Shank Seating Depth

0,46 in. 11,68 mm

Capacity Displaced by Seated Bullet

0,1192 in.³ 1,954 cm³

Useable Case Capacity

0,3325 in.³ 5,448 cm³

Bullet Travel at Muzzle Exit

24,46 in. 621,28 mm

Loading Ratio("Density") / Filling

49.2 %

Charge Fraction Burnt at Shot Start

4,20 %

Predicted Data:

Maximum Chamber Pressure

14544 psi. 1003 bar

Bullet Travel at Pmax

0,62 in. 15,7 mm

at Muzzle Exit:

Bullet Velocity

1220 fps. 372,0 m/s

Pressure at Muzzle

575 psi. 40 bar

Bullet Energy

1323 ft.lbs. 1793 Joule

Bullet Barrel Time

2,345 ms

Propellant Burnt

100,0 %

Ballistic Efficiency

47,9 %

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 reached before bullet's base passes muzzle.

