

# Measuring A Cotton Thread – 0.033 mm.

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The Abile Eye USB uv Microscope was used to examine a Q Tip as shown in Fig. 1.

A portion of the cotton was placed on the 3/8 stage for maximum magnification along with a 30 Ga. syringe needle of 12.0 mils (0.31mm) diameter as shown in Fig. 2. The first thread on the left touching the needle was enlarged in Paint Shop Pro, PSP, as shown in Fig. 3. The thread is estimated to be 7 pixels in diameter. Two one pixel wide white lines were drawn on the edges of the needle and an enlarged view, using PSP, of the image was made to count the pixels.

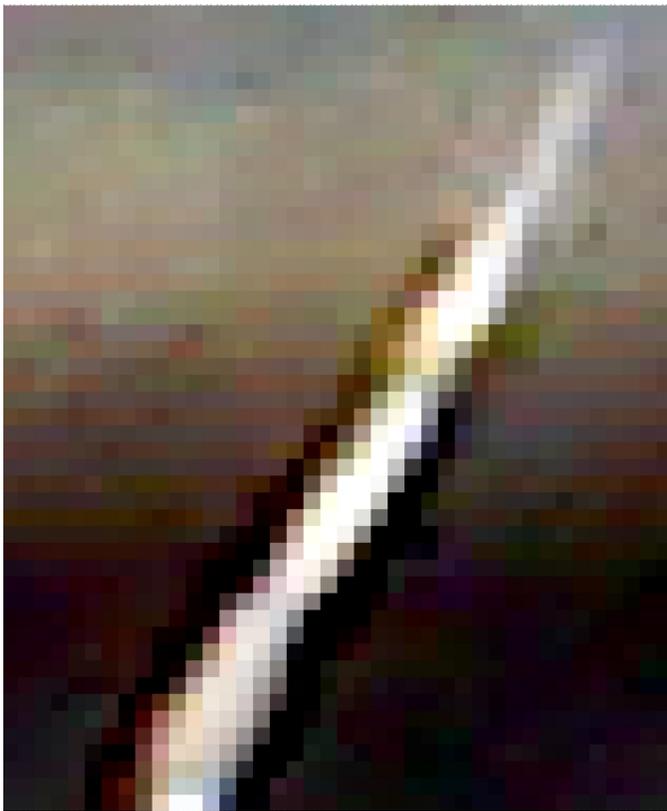
The 12 mil diameter needle is 65 pixels in diameter as shown in fig. 4. Each pixel is  $65/12$  or 0.18 mils. The cotton thread is 7 pixels or 1.29 mils (0.033 mm) in diameter. A mil is 0.001 inches.



*Fig. 1 – Cotton Q Tip showing threads.*



*Fig. 2 - Closer view of cotton thread with 30 Ga. Needle.*



*Fig. 3 – Greatly enlarged view of the thread - 7 pixels.*



*Fig. 4 – Needle & 1 pixel lines for counting pixels – 65.*