# Yarn Numbering Systems

## Linear Density

**Direct**
**[Mass/unit length system]**
**eg: Denier = Mass in g of 9000m**
**Tex = Mass in g of 1000m**
**Decitex = Mass in g of 10000m**

**Indirect**
**[Length/unit mass system]**
**eg: Count = No of hanks/leas of a given length (yards) that weigh 1lb**

[see following tables for the main system]

## Multiplying factors for DIRECT systems

| Yarn number system | Symbolic abbreviation | Unit of mass used | Unit of length used | Unit of yarn number | Multiplying factors yarn number to tex value |
|---|---|---|---|---|---|
| Tex | Tt | 1g | 1km | g/km | - |
| Denier | Td | 1g | 9000m | g/9000m | 0.1111 |
| Linen (dry spun) Hemp, Jute | Tj | 1lb | 14400yd [spyndle unit] | lb/14400yd | 34.45 |
| Woollen | Taw | 1lb | 14400yd | lb/14400yd | 34.45 |

## Constants for conversion of INDIRECT systems

| Yarn count system | Symbolic abbreviations | Unit of mass used | Unit of length used | Unit of yarn count | Constants [k] for conversion to tex values |
|---|---|---|---|---|---|
| Cotton bump yarn | $N_B$ | 1oz | 1yd | yd/oz | 31,000 |
| Cotton [English] | $Ne_c$ | 1lb | 840yd [hank] | 840yd/lb | 590.5 |
| Glass [USA and UK] | $N_G$ | 1lb | 100yd | 100yd/lb | 4961 |
| Linen (wet spun) | $Ne_L$ | 1lb | 300yd [lea] | 300yd/lb | 1654 |
| Metric | Nm | 1kg | 1km | km/kg | 1000 |
| Spun Silk | Ns | 1lb | 840yd | 840yd/lb | 590.5 |
| Typp | Nt | 1lb | 1000yd | 1000yd/lb | 496.1 |
| Woollen [American run] | Nar | 1oz | 100yd | 100yd/oz | 310 |
| Woollen [Dewsbury] | Nd | 1oz | 1yd | yd/oz | 31,000 |
| Woollen [Galashiels] | Ng | 24oz | 300yd [cut] | 300yd/24oz | 2480 |
| Woollen [Hawick] | Nh | 26oz | 300yd [cut] | 300yd/26oz | 2687 |
| Woollen [Irish] | Niw | 0.25oz | 1yd | yd/0.25oz | 7751 |
| Woollen [Yorkshire] | Ny | 1lb | 256yd [skein] | 256yd/lb | 1938 |
| Worsted | $Ne_w$ | 1lb | 560yd [hank] | 560yd/lb | 885.8 |

$$\text{Count} = \frac{k}{\text{Tex}}$$

$$\text{Tex} = \frac{k}{\text{Count}}$$

Reference Section