

# EYEPIECE GRATICULES (RETICLES)

## SQUARES AND GRIDS

Note: These may need to be calibrated, according to intended use. There are a number of uses for the grids and squares listed and they will largely depend on the individual user's application.

### Eyepiece Scales

#### Sectoring

A squared graticule might be used for the systematic examination of a specimen. Some of the squared patterns are numbered to aid the identification of areas of interest. Sectoring is particularly useful for making drawings of specimens onto graph paper. The chessboard type of pattern helps the user to distinguish the position being examined: the darker squares are translucent, while the lighter ones are transparent, avoiding eyestrain in prolonged counting as may be necessary in haematology. These patterns provide the same advantages when used with image analysis and capture devices.

#### Counting

A squared graticule can be used for counting. Here the basic principle is that a small area of the specimen is analysed in order to obtain information about the total area. This minimises sometimes wasteful work enabling simple analysis of a particular area. An example of this would be the comparison of large to small particles in a specimen. By using the Miller graticule (NE57) only the smaller particles in the small square are counted, the result being multiplied by ten for comparison with the number of larger particles in the large square.

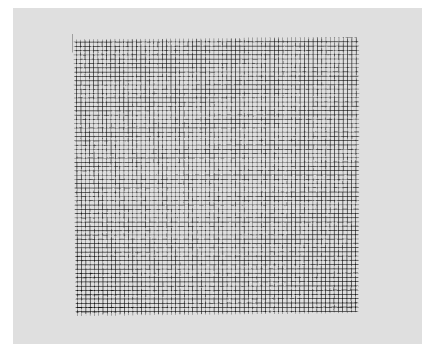
#### Squared Grids

Squared grids can be used in particle size analysis as simple technical aids where sophisticated image analysis systems are not required. The areas of the particles to be measured can be estimated by simply counting the number of squares occupied by those particles. It is necessary to estimate fractions of a square or make a rule (e.g. count as a square all partly covered squares at the right and bottom sides of the grid, and ignore partly covered squares at the left and upper sides of the square). This method would only be useful for a fairly crude estimation of a large diameter. For more detailed optical analysis it is advisable to use a specialised graticule such as those in the Particle Size Analysis section on page 19.

### Squared Grids – NE10, NE11, NE34

Simple grids are convenient for making sketches of the observed specimen on graph paper. They are also useful for particle counting.

Pattern	Description	Diameter	Order Code
NE10	Grid (net) 0.5mm pitch. Surface chrome image.	16mm	01B16207
		19mm	01B19207
		21mm	01B21207
		Special	01BSP207
Pattern	Description	Diameter	Order Code
NE11	Grid (net) 1.0mm pitch. Surface chrome image.	16mm	01B16209
		19mm	01B19209
		21mm	01B21209
		Special	01BSP209
Pattern	Description	Diameter	Order Code
NE34	Grid (net) 0.1mm squares. Surface chrome image.	16mm	01B16300
		19mm	01B19300
		21mm	01B21300
		Special	01BSP300



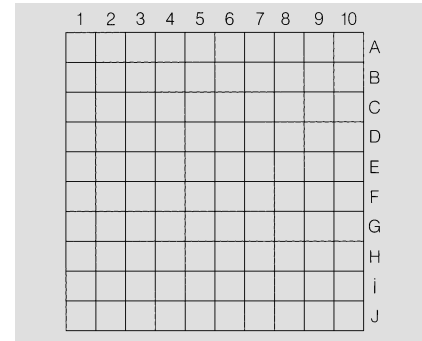
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## SQUARES AND GRIDS

### Indexed Grids - NE10A, NE11A, NE34A

Useful for particle counting, particularly where reference is needed between workers. Also useful for area of specimen determinations.

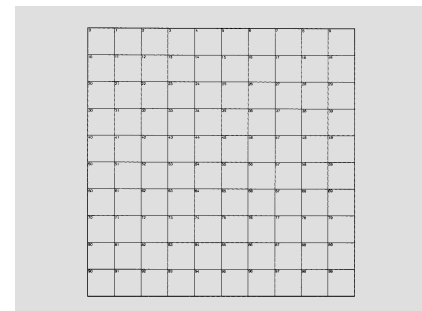
Pattern	Description	Diameter	Order Code
NE10A	Numbered grid 5mm x 5mm. 0.5mm pitch. Marked 1–10 and A-J. Surface chrome image.	16mm	01B16208
		19mm	01B19208
		21mm	01B21208
		Special	01BSP208
Pattern	Description	Diameter	Order Code
NE11A	Numbered grid 10mm x 10mm. 1.0mm pitch. Marked 1-10 and A-J. Surface chrome image	16mm	01B16210
		19mm	01B19210
		21mm	01B21210
		Special	01BSP210
Pattern	Description	Diameter	Order Code
NE34A	Numbered grid 1mm x 1mm. 0.1mm pitch. Marked 1-10 and A-J. Surface chrome image	16mm	01B16220
		19mm	01B19220
		21mm	01B21220
		Special	01BSP220



### Indexed Grids - NE35

Useful for area of specimen determinations, especially rectangular shapes, also for particle counting.

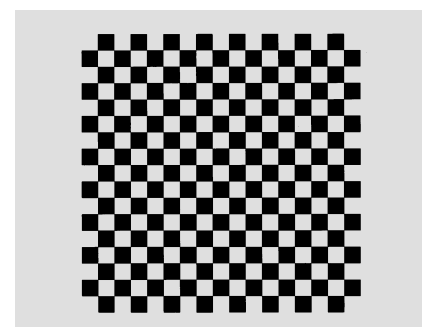
Pattern	Description	Diameter	Order Code
NE35	Numbered grid 10mm x 10mm. 1mm indexed squares. Surface chrome image.	16mm	01B16221
		19mm	01B19221
		21mm	01B21221
		Special	01BSP221



### Chessboard Squares – NE15

The dark squares are translucent. Used as an alternative to simple grids for area of specimen determination and particle counting. Alternate light and dark squares help to reduce eyestrain.

Pattern	Description	Diameter	Order Code
NE15	Chessboard (net) 2.0mm squares. Surface chrome image.	16mm	01B16211
		19mm	01B19211
		21mm	01B21211
		Special	01BSP211



We manufacture components (encoder discs, graticules, metal foils, resolution standards) to custom design, if it is not in the catalogue please contact us for pricing information.

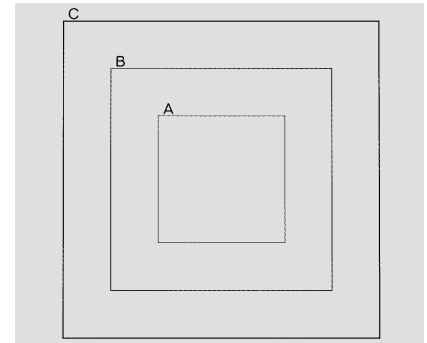
# EYEPIECE GRATICULES (RETICLES)

## SQUARES AND GRIDS

### Squares - NE38

Combines three areas in one for convenience, giving area ratios A:B of 1:3 and B:C of 1:2.

Pattern	Description	Diameter	Order Code
NE38	Squares 10mm, 7mm & 4mm. Glass sandwich.	16mm	01B16222
		19mm	01B19222
		21mm	01B21222
		Special	01BSP222



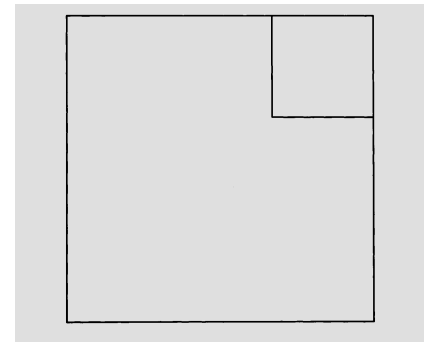
### Miller Squares – NE57

The ratio of large to small square is 9:1. Originally designed for haematology, they can be utilised for rapid counting of any evenly spread field of particles.

References: American Journal of Clinical Pathology Vol. 20, 1950, page 1079. "Time Saving Device For Counting Reticulocyte." G.Brescher and Schneiderman.

Practical Haematology-J.D.Dacy. Published by J.A.Churchill. 2nd Edition 1956 page 25.

Pattern	Description	Diameter	Order Code
NE57	Miller 7 x 7 mm grid. Glass sandwich.	16mm	01B16232
		19mm	01B19232
		21mm	01B21232
		Special	01BSP232



### Whipple Grid – NE29

Originally designed for water particle analysis, but may be used for other aspects of particle counting.

Grid shown: Ratio of full square to smallest is 50:1. Area is 2500:1

Reference: Microscopy of Drinking Water.

Pattern	Description	Diameter	Order Code
NE29	Whipple grid 100 squares in 7mm area. Surface chrome image	16mm	01B16218
		19mm	01B19218
		21mm	01B21218
		Special	01BSP218

