

# EYEPIECE GRATICULES (RETICLES)

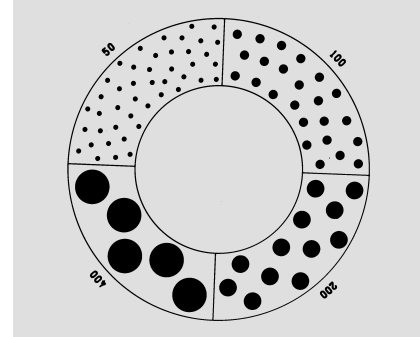
## SPECIALIST DESIGNS

### Spray Droplet Sizing Graticule (Matthews) - NG30

For size and distribution assessments of aerosol droplets. Used in conjunction with Graticule's 40x microscope for direct measurements of droplets from 50 to 400 microns diameter. Actual pattern sizes are 50, 100, 200 and 400 microns.

W.H.O. (Details on request) and G.A.Mathews. Imperial College. (Direct correspondence.)

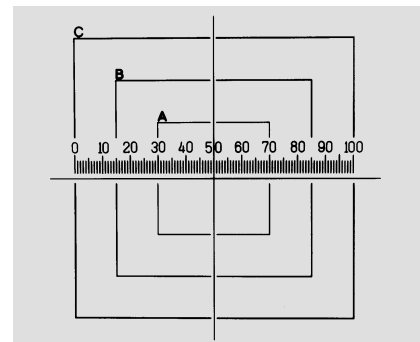
Pattern	Description	Diameter	Order Code
NG30	Matthews spray droplet. Surface chrome image.	16mm	01B16261
		19mm	01B19261
		21mm	01B21261
		Special	01BSP261



### Thompson- G23

For counting particles in any of three areas of known size. The graticule is calibrated in the same manner as a normal eyepiece scale. The result is then used to calculate the area of any square.

Pattern	Description	Diameter	Order Code
G23	Thomson for dust analysis. 10mm, 7mm and 4mm squares. Glass sandwich.	16mm	01A16056
		19mm	01A19056
		21mm	01A21056
		Special	01ASP056



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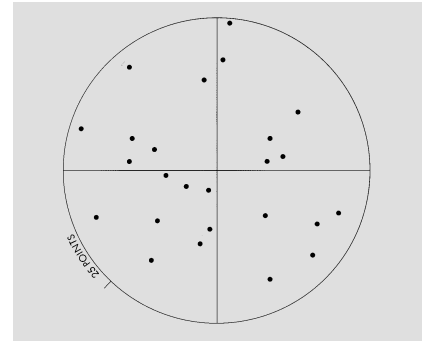
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## SPECIALIST DESIGNS

### Chalkley Point Array - NG52

This is used to quickly determine the relationship of components to each other using random sampling.

An example of its application is given by Curtis, where a researcher might want to see whether or not a certain drug affects the volume proportion of cell types in a given organ. With this graticule the proportion of points lying over the image of one type of component is statistically proportional to the area occupied by that component. The 25 points of the array are placed over the field of view at random, so that a comparison can be made between the number of points touching the one type of component, with the number touching the other type of component in each viewing. A series of observations will yield an increasingly accurate ratio of the comparative incidence of each type of particle.



Ref. A.S.C.Curtis. Medical and Biological Illustration, Vol. 10. pp 261-266. "Area and Volume Measurements by Random Sampling Methods"

Pattern	Description	Diameter	Order Code
NG52	Chalkley point array. Surface chrome image.	16mm	01B16257
		19mm	01B19257
		21mm	01B21257
		Special	01BSP257

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## SPECIALIST DESIGNS

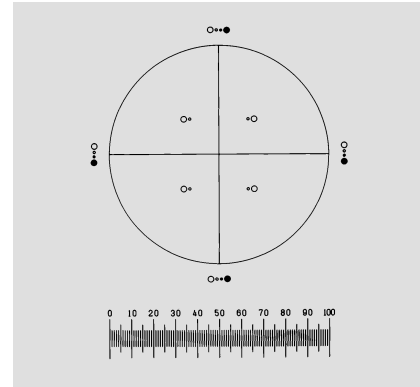
### Pharmaceutical PSA Pattern – G57

This graticule was designed for the pharmaceutical industry. However, it is also useful where particle size considerations are restricted to 10mm and 25mm. Dots and circles give quick references for these two sizes. In addition a scale is incorporated.

The microscope must be calibrated when ordering this graticule, such that the circle must equate to 1mm on the microscope stage.

Reference: The United States Pharmaceutical Conventions Inc. Pharmaceutical Forum Vol.19 No.6.

Requires calibration factor. See page 9.



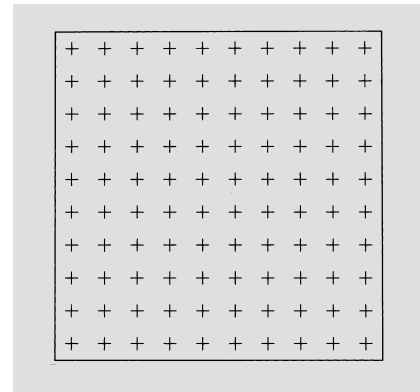
Pattern	Description	Diameter	Order Code
G57	Pharmaceutical PSA pattern. Glass sandwich.	19mm	01A19076
		21mm	01A21076
		Special	01ASP076

### Counting Pattern – NG14

Simple counting for geological and soil analysis.

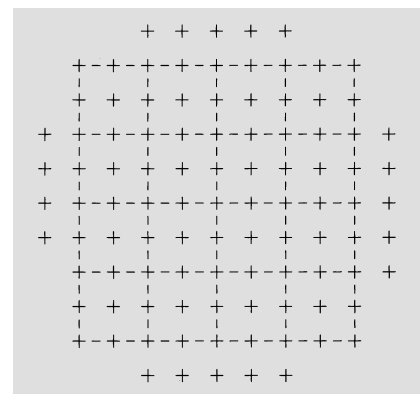
Reference: L.G.Briarty. "Stereology : Methods for Quantitative Light and Electron Microscopy." Sci. Prog. Oxf. 1975 62; 1-32

Pattern	Description	Diameter	Order Code
NG14	Counting pattern for soil analysis. 10mm square. Surface chrome image.	16mm	01B16254
		19mm	01B19254
		21mm	01B21254
		Special	01BSP254



### Lennox Grain Analysis – NG21

Pattern	Description	Diameter	Order Code
NG21	Lennox for grain analysis. Surface chrome image.	16mm	01B16255
		19mm	01B19255
		21mm	01B21255
		Special	01BSP255



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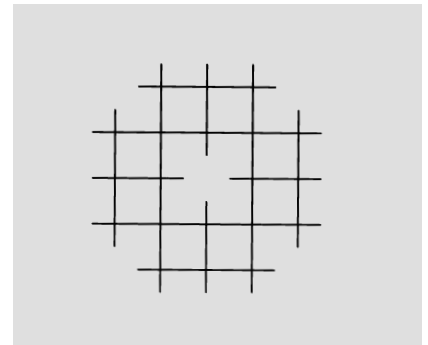
## SPECIALIST DESIGNS

### Kotter – G48

Reference: I.S.O. 7404-4: 1988 (E). Methods for Analysis of Bitumous Coal and Anthracite. Part 4 and Methods of Determining Microlithotype Composition.

Requires Calibration Factor. See page 9

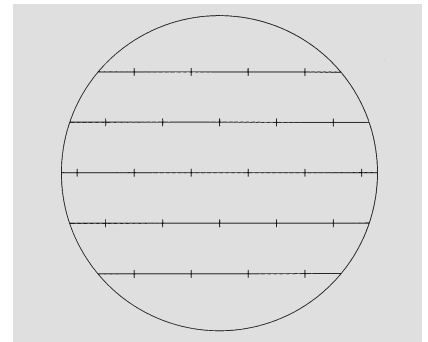
Pattern	Description	Diameter	Order Code
G48	Kotter pattern. Glass sandwich. Note: This pattern requires a calibration factor.	16mm	01A16072
		19mm	01A19072
		21mm	01A21072
		Special	01ASP072



### Zeiss Integrating Disc 1 or Henning Reseau Pattern 25 points – G49

Reference: Zeiss Werkzeitschrift. No.30 page 80.

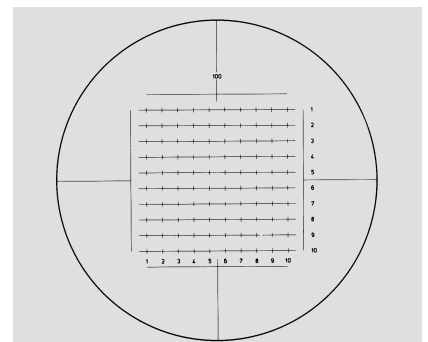
Pattern	Description	Diameter	Order Code
G49	Henning Reseau pattern. (Zeiss integrating disc 1). Glass sandwich.	16mm	01A16073
		19mm	01A19073
		21mm	01A21073
		Special	01ASP073



### Zeiss Integrating Eyepiece Disc 100 points – G47

Similar to G49 but extended to 100 points, which are indexed.

Pattern	Description	Diameter	Order Code
G47	Zeiss integrating eyepiece disc. Glass sandwich.	16mm	01A16090
		19mm	01A19090
		21mm	01A21090
		Special	01ASP090

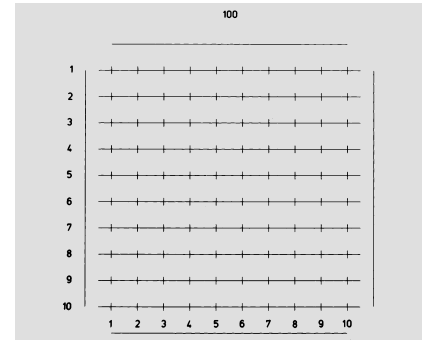


# EYEPIECE GRATICULES (RETICLES)

## SPECIALIST DESIGNS

### Integrating Eyepiece – G50

Pattern	Description	Diameter	Order Code
G50	Integrating eyepiece (simplified). Surface chrome image.	19mm	01B19075
		21mm	01B21075
		Special	01BSP075



## STEREOLOGY

In its simplest form, stereology is the science where information about a three dimensional object is obtained from only a two-dimensional section of that structure.

Measurements are usually made with these graticules in the following manner:-

1. An adequate representation of sections of a specimen is obtained.
2. The graticule is superimposed upon the specimen (or micrograph/ projected image of the section).
3. Finally, the interaction between the superimposed graticule and the test sections are recorded.

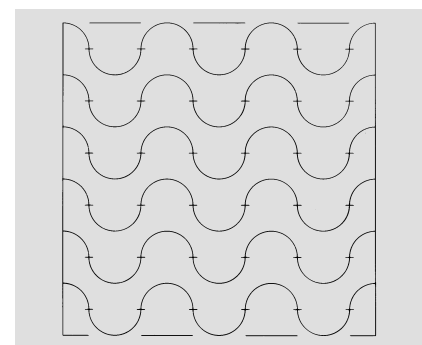
An overall introduction is given by: L.G.Briarty. "Stereology : Methods for Quantitative Light and Electron Microscopy." Sci. Prog. Oxf. 1975 62; 1-32

### The Mertz Graticule (36 point) – NGM1

Used to estimate the three dimensional surface areas or the surface density of a component in a given volume, when the component does not have a random orientation. It comprises a test system with parallel curved lines used for measuring the intersection of points.

Reference: W.A.Mertz . " Mikroskopie" Vol. 22 1967 pp 132-142.

Pattern	Description	Diameter	Order Code
NGM1	Mertz for stereology. Surface chrome image.	16mm	01B16258
		19mm	01B19258
		21mm	01B21258
		Special	01BSP258



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