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# Histogram Calculation (Pro edition only)

Open Table or Figure or Fit Plot with initial data and select Processing → Histogram menu item to calculate histogram.



## Binning

You can either set the bin width/count manually or specify auto binning criteria.

### Bin Bounds

MagicPlot aligns the lower limit of the first bin exactly at the beginning of specified histogram range (From: field). The upper limit of the last bin is calculated on the basis of bin width and may be greater than the specified right histogram limit (to: field) as shown on the screenshot above.

### Auto Binning Criteria

You can enter any criteria in "Auto Binning" combo box.

- Typing  $k=...$  means setting the number of bins  $k$
- Typing  $h=...$  means setting the bin width  $h$ .

The default alternatives are:

- $k=\sqrt{n}$
- $h=3.49*s/n^{(1/3)}$  (Scott's formula)
- $k=\log_2(n)+1$  (Sturges' formula)
- MISE optimisation (Shimazaki method, see <http://toyoizumilab.brain.riken.jp/hideaki/res/histogram.html>).

You can use these parameters in the expression:

- $n$  — the number of data points
- $s$  — data standard deviation
- $m$  — data mean
- $\min$  — data minimum
- $\max$  — data maximum.

## Preview Plot

The preview plot shows the histogram which is evaluated according to selected parameters. It also shows the data point positions on X axis in the bottom of the plot.

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<https://magicplot.com/wiki/> - **MagicPlot Manual**

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