

Semper 6 Command Reference

ps

keys:	[from]	<i><number></i>	source picture
	[to]	<i><number></i>	output picture
options:	ln		produce (natural) logarithm of transform intensity

Use **ps** to calculate the power spectrum (Fourier transform intensity) of a picture. This is a widely used tool for detecting and measuring periodic features, and for assessing resolution or image formation conditions.

Examples

```
ps 1 4
```

This command obtains the spectrum of picture 1 as picture 4.

```
ps ln; survey full; min=mean; display preset
```

This command replaces the current picture with the (natural) log of its spectrum, to accommodate the wide dynamic range of the spectrum, and displays this, suppressing the very small values.

Description

The **ps** command performs a Fourier transform of a picture and then takes its squared modulus (intensity). If you supply the picture already transformed, as a *Fourier* picture, **ps** simply takes the squared modulus.

ps produces a *Spectrum* class picture in floating-point form. **ps** follows the same pattern as **fourier** with respect to real/complex data. If the source data is real (*real Image* or *auto-Correlation*, or half-plane *Fourier*), only the right half-plane is output. If the data is complex (*Complex Image* or *auto-Correlation*, or full-plane *Fourier*), the full-plane is output. Use the commands **fullplane** or **halfplane** to convert these further if required.

Notes

restrictions:	image sizes must be powers of two unsuitable for direct output to display
multi-layer pictures:	faulted
forms used internally:	fp, complex
see also:	fourier, fullplane, halfplane

ps

Defaults and Ranges

keys/options	defaults	range
[from]	current picture, held in the variable <i>select</i>	valid picture number
[to]	source picture	valid picture number