



# The `eurion` package

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<https://github.com/originalsouth/EURion>

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## 1 Overview

`eurion` overlays the *EURion constellation* – the five-circle anti-photocopy pattern from banknotes – onto LaTeX document pages. Three placement modes (`scatter`, `corner`, `manual`); configurable color, size, density, rotation, and seed.

This is a *visual reproduction only*. Modern image-editor anti-copy features rely on Digimarc digital watermarks, not on the EURion constellation alone, so this package will not actually prevent photocopying or scanning.

## 2 Installation

Drop `eurion.sty` next to your `.tex` file, or into your local `texmf` tree. The package needs `tikz`, `eso-pic`, `xkeyval`, and `xcolor`.

## 3 Quick start

```
\usepackage{eurion} % scatter mode, default
\usepackage[corner=top-right]{eurion} % one mark per corner
\usepackage>manual{eurion} % no auto overlay
\eurion[color=orange]{current page.center}
```

## 4 Modes

`scatter` (default) Pseudo-random tiling at random angles across every page.

`corner` A single constellation tucked into a chosen corner of every page.

`manual` No automatic overlay; the user calls `\eurion[opts]{coord}` at the desired locations.



## 5 Options

Key	Values	Default
mode	scatter   corner   manual	scatter
color	yellow   green   orange   xcolor expr	banknote gold
size	scale factor (1 $\approx$ 1 mm rings)	1
density	integer count per page (scatter)	20
rotate	random   none   degrees	random
corner	top-left   top-right   bottom-left   bottom-right	top-right
seed	integer	1

## 6 The `\eurion` macro

In any mode you can drop an extra constellation by hand:

```
\eurion[color=green, size=2, rotate=15]{current page.center}
\eurion[color=orange]{[shift={(3cm,-3cm)}]current page.north west}
```

The argument is any TikZ coordinate; the macro draws inside its own remember picture, overlay tikzpicture.

## 7 Caveats

- **Color channel only.** Detection software looks for the rings in a color channel; a B&W print of your PDF will hide the pattern.
- **Not real anti-copy.** See above; this is decorative.
- **The exact spec is secret.** Public reproductions disagree on coordinates; this package uses the geometry from Petr Kutalek's PostScript gist.

## 8 License

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## 9 References

- [https://en.wikipedia.org/wiki/EURion\\_constellation](https://en.wikipedia.org/wiki/EURion_constellation)
- <https://www.cl.cam.ac.uk/~mgk25/eurion.pdf>
- <https://gist.github.com/petrkutalek/93b7eebf22f4dbcfab8cd80a91fd27a8>
- <https://murdoch.is/projects/currency/>