The eso-pic package*

Rolf Niepraschk
Rolf.Niepraschk@gmx.de

1 Introduction

This package makes it easy to add some picture commands to every page at absolute positions.

2 Usage

See also the example LaTeX documents (`eso-*.tex`).

2.1 Basic commands for adding LaTeX stuff to the page background

`\AddToShipoutPictureBG` All the picture commands which are parameters of an `\AddToShipoutPictureBG` command will be added to the internal macro `\ESO@HookIBG`. This macro is part of a zero-length `picture` environment with basepoint at the lower left corner of the page (default) or at the upper left corner (package option "texcoord"). The `picture` environment will be shipped out at every new page.

`\AddToShipoutPictureBG*` `\AddToShipoutPictureBG*` works like `\AddToShipoutPictureBG` but only for the current page. It used the internal macro `\ESO@HookIIBG` which contents will be removed automatically.

For compatibility the macros `\AddToShipoutPicture` and `\AddToShipoutPicture*` are aliases for `\AddToShipoutPictureBG` and `\AddToShipoutPictureBG*`.

`\AddToShipoutPictureFG` Works like `\AddToShipoutPictureBG` but the picture commands are on the
`\AddToShipoutPictureFG*` top of the normal document content.

`\ClearShipoutPictureBG` A call of `\ClearShipoutPictureBG` clears the contents of `\ESO@HookIBG`.

For compatibility the macro `\ClearShipoutPicture` is an alias for `\ClearShipoutPictureBG`.

`\ClearShipoutPictureFG` A call of `\ClearShipoutPictureFG` clears the contents of `\ESO@HookIFG`.

`\LenToUnit` [Allows a length as parameter to a picture command.] Note that this macro exist only for compatibility to older versions of this package. A recent LaTeX version allows dimensions in picture commands.

`\gridSetup` `\gridSetup[`⟨*gridunitname*⟩`]{`⟨*gridunit*⟩`}{`⟨*labelfactor*⟩`}{`⟨*griddelta*⟩`}{`⟨*gridDelta*⟩`}{`⟨*gap*⟩`}`. For details see the implementation section.

*This document corresponds to eso-pic v3.0c, dated 2023/05/03.

\AtPageUpperLeft
\AtPageLowerLeft
\AtPageCenter
\AtTextUpperLeft
\AtTextLowerLeft
\AtTextCenter
\AtStockUpperLeft
\AtStockLowerLeft
\AtStockCenter

Helper macros for easier positioning on the page.

2.2 Package options

Option	Value	Comments
`pscoord`	empty or *true*, *false*	The zero point of the coordinate system is the lower left corner of the page (the default).
`texcoord`	empty or *true*, *false*	The zero point of the coordinate system is the upper left corner of the page.
`grid`	empty or *true*, *false*	A grid is drawing; default: false.
`gridBG`	empty or *true*, *false*	Put the grid in the background; default: false.
`gridunit`	*mm*, *in*, *bp*, *pt*	Distance between gridlines are multiples of `gridunit`. default: mm.
`gridcolor`	a valid color name	Color of the main gridlines; default: black
`subgridcolor`	a valid color name	Color of the subgridlines; default: black.
`subgridstyle`	*solid* or *dotted*	'dotted' is very slow! default: solid.
`colorgrid`	empty or *true*, *false*	Shortcut for 'grid=true', 'gridcolor=red' and 'subgridcolor=green'; default: false.
`dvips`	empty or *true*, *false*	Is also true if the package option `dvips` is used by color or graphics. If true package eepic is loaded for better performance of dotted lines.

3 Implementation

3.1 The main functionality

\LenToUnit Only for compatibility

```
\providecommand*\LenToUnit[1]{#1}

\newdimen\ESO@tempdima
\newdimen\ESO@tempdimb
```

\ESO@isMEMOIR Support for the memoir class.

```
\newcommand\ESO@isMEMOIR[2]{#2}
\@ifclassloaded{memoir}{\renewcommand\ESO@isMEMOIR[2]{#1}}{}
```

\AtPageUpperLeft

```
\newcommand\AtPageUpperLeft[1]{%
  \put(0,-\ESO@yoffsetI){#1}%
}
```

\AtPageLowerLeft

```
\newcommand\AtPageLowerLeft[1]{\AtPageUpperLeft{%
  \put(0,-\paperheight){#1}}}
```

\AtPageCenter

```
\newcommand\AtPageCenter[1]{\AtPageUpperLeft{%
  \put(.5\paperwidth,-.5\paperheight){#1}}%
}
```

\AtStockLowerLeft

```
\newcommand\AtStockLowerLeft{}
\ESO@isMEMOIR{%
  \renewcommand\AtStockLowerLeft[1]{%
    \begingroup
      \ESO@tempdima=-\stockwidth
      \advance\ESO@tempdima\trimedge
      \advance\ESO@tempdima\paperwidth
      \if@twoside\ifodd\c@page\else
        \ESO@tempdima=-\trimedge
      \fi\fi
      \ESO@tempdimb=-\stockheight
      \advance\ESO@tempdimb\paperheight
      \advance\ESO@tempdimb\trimtop
      \AtPageLowerLeft{%
        \put(\ESO@tempdima,\ESO@tempdimb){#1}%
      }%
    \endgroup
  }
}{%
  \let\AtStockLowerLeft=\AtPageLowerLeft
}
```

\AtStockUpperLeft

```
\newcommand\AtStockUpperLeft{}
\ESO@isMEMOIR{%
  \renewcommand\AtStockUpperLeft[1]{%
    \AtStockLowerLeft{%
      \put(0,\stockheight){#1}%
    }%
  }%
}{%
  \let\AtStockUpperLeft=\AtPageUpperLeft
}
```

\AtStockCenter

```
\newcommand\AtStockCenter{}
\ESO@isMEMOIR{%
  \renewcommand\AtStockCenter[1]{%
    \AtStockLowerLeft{%
      \put(.5\stockwidth,.5\stockheight){#1}%
    }%
  }%
}{%
  \let\AtStockCenter=\AtPageCenter
}
```

\AtTextUpperLeft

```
\ESO@isMEMOIR{%
  \newcommand\AtTextUpperLeft[1]{%
    \begingroup
      \if@twoside
        \ifodd\c@page
          \ESO@tempdima=\spinemargin
        \else
          \ESO@tempdima=\paperwidth
          \advance\ESO@tempdima-\textwidth
          \advance\ESO@tempdima-\spinemargin
        \fi
      \else
        \ESO@tempdima=\spinemargin
      \fi
      \ESO@tempdimb=-\uppermargin
      \AtPageUpperLeft{%
        \put(\ESO@tempdima,\ESO@tempdimb){#1}%
      }%
    \endgroup
  }%
}{%
  \newcommand\AtTextUpperLeft[1]{%
    \begingroup
      \ESO@tempdima=1in\relax
      \if@twoside
        \ifodd\c@page
          \advance\ESO@tempdima\oddsidemargin
        \else
          \advance\ESO@tempdima\evensidemargin
        \fi
      \else
        \advance\ESO@tempdima\oddsidemargin
      \fi
      \ESO@tempdimb=-1in\relax
      \advance\ESO@tempdimb-\topmargin
      \advance\ESO@tempdimb-\headheight
      \advance\ESO@tempdimb-\headsep
      \AtPageUpperLeft{%
        \put(\ESO@tempdima,\ESO@tempdimb){#1}%
      }%
    \endgroup
  }
}
```

\AtTextLowerLeft

```
\newcommand\AtTextLowerLeft[1]{\AtTextUpperLeft{%
  \put(0,-\textheight){#1}}}
```

\AtTextCenter

```
\newcommand\AtTextCenter[1]{\AtTextUpperLeft{%
  \put(.5\textwidth,-.5\textheight){#1}}}
```

\ESO@HookIBG
\ESO@HookIIBG
\ESO@HookIIIBG
\ESO@HookIFG
\ESO@HookIIFG
\ESO@HookIIIFG

```
\newcommand{\ESO@HookIBG}{}
```

```
\newcommand{\ESO@HookIIBG}{}
\newcommand{\ESO@HookIIIBG}{}
\newcommand{\ESO@HookIFG}{}
\newcommand{\ESO@HookIIFG}{}
\newcommand{\ESO@HookIIIFG}{}
\newcommand{\ESO@HookI}{}
\newcommand{\ESO@HookII}{}
\newcommand{\ESO@HookIII}{}
\let\ESO@HookI=\ESO@HookIBG
\let\ESO@HookII=\ESO@HookIIBG
\let\ESO@HookIII=\ESO@HookIIIBG
```

`\AddToShipoutPictureBG`
`\AddToShipoutPictureFG`

```
\newcommand{\AddToShipoutPictureBG}{%
  \@ifstar{\g@addto@macro\ESO@HookIIBG}{\g@addto@macro\ESO@HookIBG}}
\newcommand{\AddToShipoutPicture}{}
\let\AddToShipoutPicture=\AddToShipoutPictureBG
```

`\AddToShipoutPictureFG`

```
\newcommand{\AddToShipoutPictureFG}{%
  \@ifstar{\g@addto@macro\ESO@HookIIFG}{\g@addto@macro\ESO@HookIFG}}
```

`\ClearShipoutPictureBG`
`\ClearShipoutPicture`
`\ClearShipoutPictureFG`

```
\newcommand{\ClearShipoutPictureBG}{\global\let\ESO@HookIBG\@empty}
\newcommand{\ClearShipoutPicture}{}
\let\ClearShipoutPicture=\ClearShipoutPictureBG
\newcommand{\ClearShipoutPictureFG}{\global\let\ESO@HookIFG\@empty}

\ESO@isMEMOIR{%
  \newcommand*\ESO@MEMOIR@corr{%
    \ESO@tempdima=-\trimedge
    \advance\ESO@tempdima-\paperwidth
    \advance\ESO@tempdima\stockwidth
    \if@twoside\ifodd\c@page\else
      \advance\ESO@tempdima2\trimedge
      \advance\ESO@tempdima\paperwidth
      \advance\ESO@tempdima-\stockwidth
    \fi\fi
    \ESO@tempdimb=\ESO@yoffsetI
    \advance\ESO@tempdimb-\trimtop
  }
  \nointerlineskip
  \AddToHook{shipout/background}{%
    \ESO@MEMOIR@corr
    \put(\ESO@tempdima,\ESO@tempdimb){%
      \ESO@HookIIIBG\ESO@HookIBG\ESO@HookIIBG
      \global\let\ESO@HookIIBG\@empty
    }%
  }%
  \AddToHook{shipout/foreground}{%
    \ESO@MEMOIR@corr
    \put(\ESO@tempdima,\ESO@tempdimb){%
      \ESO@HookIFG\ESO@HookIIFG\ESO@HookIIIFG
```

```
      \global\let\ESO@HookIIFG\@empty
    }%
  }%
}{%
  \nointerlineskip
  \AddToHook{shipout/background}{%
    \put(0,\ESO@yoffsetI){%
      \ESO@HookIIIBG\ESO@HookIBG\ESO@HookIIBG
      \global\let\ESO@HookIIBG\@empty
    }%
  }%
  \AddToHook{shipout/foreground}{%
    \put(0,\ESO@yoffsetI){%
      \ESO@HookIFG\ESO@HookIIFG\ESO@HookIIIFG
      \global\let\ESO@HookIIFG\@empty
    }%
  }%
}
```

3.2 The background grid

```
\RequirePackage{keyval}
```

Initialising some macros

```
\newif\ifESO@dvips\ESO@dvipsfalse \newif\ifESO@grid\ESO@gridfalse
\newif\ifESO@texcoord\ESO@texcoordfalse \newif\ifESO@gridBG\ESO@gridBGfalse
\newcommand*\ESO@gridunitname{}
\newcommand*\ESO@gridunit{}
\newcommand*\ESO@labelfactor{}
\newcommand*\ESO@griddelta{}\newcommand*\ESO@griddeltaY{}
\newcommand*\ESO@gridDelta{}\newcommand*\ESO@gridDeltaY{}
\newcommand*\ESO@gridcolor{}
\newcommand*\ESO@subgridcolor{}
\newcommand*\ESO@subgridstyle{dotted}% ???
\newcommand*\ESO@gap{}
\newcommand*\ESO@yoffsetI{}\newcommand*\ESO@yoffsetII{}
\newcommand*\ESO@gridlines{\thinlines}
\newcommand*\ESO@subgridlines{\thinlines}
\newcommand*\ESO@hline[1]{\ESO@subgridlines\line(1,0){#1}}
\newcommand*\ESO@vline[1]{\ESO@subgridlines\line(0,1){#1}}
\newcommand*\ESO@Hline[1]{\ESO@gridlines\line(1,0){#1}}
\newcommand*\ESO@Vline[1]{\ESO@gridlines\line(0,1){#1}}
\newcommand\ESO@fcolorbox[3]{\fbox{#3}}
\newcommand\ESO@color[1]{}
\newcommand\ESO@colorbox[2]{%
  \begingroup
    \fboxrule=\z@\fbox{#2}%
  \endgroup
}
```

`\gridSetup`

```
\newcommand\gridSetup[6][]{%
  \edef\ESO@gridunitname{#1}\edef\ESO@gridunit{#2}
  \edef\ESO@labelfactor{#3}\edef\ESO@griddelta{#4}
  \edef\ESO@gridDelta{#5}\edef\ESO@gap{#6}}
```

All the key-value options

```
\define@key{ESO}{texcoord}[true]{\csname ESO@texcoord#1\endcsname}
\define@key{ESO}{pscoord}[true]{\csname @tempswa#1\endcsname
  \if@tempswa\ESO@texcoordfalse\else\ESO@texcoordtrue\fi}
\define@key{ESO}{dvips}[true]{\csname ESO@dvips#1\endcsname}
\define@key{ESO}{grid}[true]{\csname ESO@grid#1\endcsname
  \setkeys{ESO}{gridcolor=black,subgridcolor=black}}
\define@key{ESO}{gridBG}[true]{\csname ESO@gridBG#1\endcsname}
\define@key{ESO}{colorgrid}[true]{\csname ESO@grid#1\endcsname
  \setkeys{ESO}{gridcolor=red,subgridcolor=green}}
\define@key{ESO}{gridcolor}{\def\ESO@gridcolor{#1}}
\define@key{ESO}{subgridcolor}{\def\ESO@subgridcolor{#1}}
\define@key{ESO}{subgridstyle}{\def\ESO@subgridstyle{#1}}%
\define@key{ESO}{gridunit}{%
  \def\@tempa{#1}
  \def\@tempb{bp}
  \ifx\@tempa\@tempb
    \gridSetup[\@tempa]{1bp}{1}{10}{50}{2}
  \else
    \def\@tempb{pt}
    \ifx\@tempa\@tempb
      \gridSetup[\@tempa]{\p@}{1}{10}{50}{2}
    \else
      \def\@tempb{in}
      \ifx\@tempa\@tempb
        \gridSetup[\@tempa]{.1in}{.1}{2}{10}{.5}
      \else
        \gridSetup[mm]{1mm}{1}{5}{20}{1}
      \fi
    \fi
  \fi
}
\setkeys{ESO}{subgridstyle=solid,pscoord=true,gridunit=mm}

\providecommand*\@classoptionslist{}
```

`\ProcessOptionsWithKV` This macro can process package options using 'key=value' syntax.

```
\def\ProcessOptionsWithKV#1{%
  \let\@tempc\@empty
  \@for\CurrentOption:=\@classoptionslist\do{%
    \@ifundefined{KV@#1@\CurrentOption}%
    {}{\edef\@tempc{\@tempc,\CurrentOption,}}}%
  \edef\@tempc{%
    \noexpand\setkeys{#1}{\@tempc\@ptionlist{\@currname.\@currext}}}%
  \@tempc
  \AtEndOfPackage{\let\@unprocessedoptions\relax}}%

\ProcessOptionsWithKV{ESO}%
```

`\ESO@div` Divides length `#1` by `#2` × `\ESO@gridunit` and adds one. Result is in `\@tempcnta`.

```
\newcommand\ESO@div[2]{%
  \ESO@tempdima=#1\relax\ESO@tempdimb=\ESO@gridunit\relax
  \ESO@tempdimb=#2\ESO@tempdimb\divide\ESO@tempdima by \ESO@tempdimb
  \@tempcnta\ESO@tempdima\advance\@tempcnta\@ne}
```

```
\@ifundefined{colorbox}{%
  \IfFileExists{xcolor.sty}{\RequirePackage{xcolor}}%
    {\RequirePackage{color}}%
}{}%
\let\ESO@color=\color
\renewcommand\ESO@colorbox[2]{%
  \begingroup
    \fboxsep=.4ex %
    \colorbox{#1}{#2}%
  \endgroup
}
\renewcommand\ESO@fcolorbox[3]{%
  \begingroup
    \fboxsep=.5ex %
    \fcolorbox{#1}{#2}{#3}%
  \endgroup
}
\AtBeginDocument{%
  \ESO@dvipsfalse
  \@ifundefined{Gin@driver}{}%
  {%
    \ifx\Gin@driver\@empty\else%
      \filename@parse{\Gin@driver}\def\reserved@a{dvips}%
      \ifx\filename@base\reserved@a\ESO@dvipstrue\fi
    \fi
  }%
  \ifESO@dvips\def\@tempb{eepic}\else\def\@tempb{epic}\fi
  \def\@tempa{dotted}%\def\ESO@gap{6\@wholewidth}%
  \ifx\@tempa\ESO@subgridstyle
    \IfFileExists{\@tempb.sty}%
    {%
      \RequirePackage{\@tempb}
      \renewcommand*\ESO@hline[1]{\ESO@subgridlines\dottedline{\ESO@gap}%
        (0,0)(##1,0)}
      \renewcommand*\ESO@vline[1]{\ESO@subgridlines\dottedline{\ESO@gap}%
        (0,0)(0,##1)}
    }{}
  \else
    \ifx\ESO@gridcolor\ESO@subgridcolor
      \renewcommand*\ESO@gridlines{\thicklines}
    \fi
  \fi
% \changes{v3.0b}{2023/03/23}{More code inside \cmd{\AtBeginDocument}}
  \ifESO@texcoord
    \def\ESO@yoffsetI{\z@}\def\ESO@yoffsetII{-\paperheight}
    \edef\ESO@griddeltaY{-\ESO@griddelta}\edef\ESO@gridDeltaY{-\ESO@gridDelta}
  \else
    \def\ESO@yoffsetI{-\paperheight}\def\ESO@yoffsetII{\z@}
    \edef\ESO@griddeltaY{\ESO@griddelta}\edef\ESO@gridDeltaY{\ESO@gridDelta}
  \fi
}
```

\ESO@gridpicture

```
\newcommand\ESO@gridpicture{%
```

```
  \begingroup
    \setlength\unitlength{\ESO@gridunit}%
    \ESO@color{\ESO@subgridcolor}%
```
— horizontal subgrid lines —
```
    \ESO@div{\paperheight}{\ESO@griddelta}%
    \multiput(0,0)(0,\ESO@griddeltaY){\@tempcnta}%
      {\ESO@hline{\paperwidth}}%
```
— vertical subgrid lines —
```
    \ESO@div{\paperwidth}{\ESO@griddelta}%
    \multiput(0,\ESO@yoffsetII)(\ESO@griddelta,0){\@tempcnta}%
      {\ESO@vline{\paperheight}}%
    \ESO@color{\ESO@gridcolor}%
```
— horizontal grid lines —
```
    \ESO@div{\paperheight}{\ESO@gridDelta}%
    \multiput(0,0)(0,\ESO@gridDeltaY){\@tempcnta}%
      {\ESO@Hline{\paperwidth}}%
```
— vertical grid lines —
```
    \ESO@div{\paperwidth}{\ESO@gridDelta}%
    \multiput(0,\ESO@yoffsetII)(\ESO@gridDelta,0){\@tempcnta}%
      {\ESO@Vline{\paperheight}}%
```
— horizontal numbers —
```
    \fontsize{10}{12}\normalfont%
    \ESO@div{\paperwidth}{\ESO@gridDelta}%
    \multiput(0,\ESO@gridDeltaY)(\ESO@gridDelta,0){\@tempcnta}{%
      \@tempcntb=\@tempcnta\advance\@tempcntb-\@multicnt
      \ifnum\@tempcntb>1\relax
        \multiply\@tempcntb by \ESO@gridDelta\relax
        \ESO@tempdima=\@tempcntb sp\ESO@tempdima=\ESO@labelfactor\ESO@tempdima
        \@tempcntb=\ESO@tempdima%
        \makebox(0,0)[c]{\ESO@colorbox{white}{\the\@tempcntb}}%
      \fi}%
```
— vertical numbers —
```
    \ifx\ESO@gridunitname\@empty\def\@tempa{0}\else\def\@tempa{1}\fi
    \ESO@div{\paperheight}{\ESO@gridDelta}%
    \multiput(\ESO@gridDelta,0)(0,\ESO@gridDeltaY){\@tempcnta}{%
      \@tempcntb=\@tempcnta\advance\@tempcntb-\@multicnt%
      \ifnum\@tempcntb>\@tempa\relax
        \multiply\@tempcntb by \ESO@gridDelta\relax%
        \ESO@tempdima=\@tempcntb sp\ESO@tempdima=\ESO@labelfactor\ESO@tempdima
        \@tempcntb=\ESO@tempdima
        \makebox(0,0)[c]{\ESO@colorbox{white}{\the\@tempcntb}}%
      \fi
    }%
```
— the unit label —
```
    \ifx\ESO@gridunitname\@empty\else
      \thicklines\fboxrule=\@wholewidth
      \put(\ESO@gridDelta,\ESO@gridDeltaY){\makebox(0,0)[c]{%
        \ESO@fcolorbox{\ESO@gridcolor}{white}{%
          \textbf{\ESO@gridunitname}}}}%
    \fi
```

```
    \normalcolor%
  \endgroup
}
```

Add the grid to the shipout picture (`\ESO@HookIIIFG` or `\ESO@HookIIIBG`) is independed from the user commands `\AddToShipoutPictureBG` and `\AddToShipoutPictureBG*`).

```
\ifESO@grid
  \ifESO@gridBG
    \g@addto@macro\ESO@HookIIIBG{\ESO@gridpicture}%
  \else
    \g@addto@macro\ESO@HookIIIFG{\ESO@gridpicture}%
  \fi
\fi
```

Change History

v0.4
General: Initial version 1
v0.5
General: Some bug corrections . . . 1
v0.6
General: Some corrections for compatibility with the html package suggested by Ross Moore and a licence note 1
v0.7
General: New command `\AddToShipoutPicture*` 1
v1.0
General: New commands `\LenToUnit`, `\AtPageUpperLeft`, `\AtPageCenter`, `\AtTextUpperLeft`, and `\AtTextCenter`. 1
v1.0a
`\ClearShipoutPictureFG`: Changed `\let` to `\global\let` (suggested by Alberto Lusiani). 5
v1.0c
General: New command `\AtTextLowerLeft` and corrections to `\AtTextUpperLeft`. 1
v1.0d
`\LenToUnit`: Using `\providecommand` instead of `\newcommand` for `\LenToUnit` . . 2
v1.1
General: New commands and package options for background grids. 1
v1.1a
`\ESO@gridpicture`: Font setting added. 9
v1.1b
General: New command `\AtPageLowerLeft` 1
New package options "texcoord" and "pscoord" 1
v1.1c
General: Remove the disadvantageous check of 'pdfTeX'. Now using with XeLaTeX should be possible. . . 8
v2.0a
General: Better test of color/xcolor 8
`\AtStockCenter`: New 3
`\AtStockLowerLeft`: New 3
`\AtStockUpperLeft`: New 3
`\AtTextUpperLeft`: Works now for class memoir 3
v2.0b
`\AddToShipoutPictureFG`: New command `\AddToShipoutPictureFG` 5
v2.0c
General: bugfix for memoir class (reported by YI Hoze) 5
v2.0d
General: grid should be in foreground 10
Improved color commands 8

v2.0e
\AtTextUpperLeft: Wrong horizontal position in one-column mode 3
v2.0f
\LenToUnit: Changed definition for better compatibility with package curve2e suggested by Claudio Beccari. 2
v2.0g
General: Foreground/background grid. 10
New \ifESO@gridBG for foreground/background grid. . . 6
New macro \ESO@HookIIIFG for foreground grid. 4
New option 'gridBG'. 7
v2.0h
General: \@classoptionslist must not be \relax 7
v3.0a
General: LaTeX's shipout hooks instead of 'atbegshi' (RN). 5
\LenToUnit: No more used. (RN). 2
v3.0b
General: More code inside \AtBeginDocument 8
v3.0c
\AtTextUpperLeft: Wrong horizontal position in memoir one-side mode (issue #5) 3

Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

Symbols

\@classoptionslist 229, 232
\@currext 236
\@currname 236
\@empty 120, 123, 142, 149, 157, 163, 231, 265, 322, 333
\@for 232
\@ifclassloaded 5
\@ifstar 115, 119
\@ifundefined 233, 244, 263
\@multicnt . . . 315, 325
\@ne 243
\@ptionlist 236
\@tempa 210, 212, 213, 216, 217, 220, 221, 271, 272, 322, 326
\@tempb . . . 211, 212, 215, 216, 219, 220, 270, 273, 275
\@tempc 231, 234, 235, 236, 237
\@tempcnta 243, 300, 303, 307, 310, 314, 315, 324, 325
\@tempcntb 315, 316, 317, 318, 319, 320, 325, 326, 327, 328, 329, 330
\@unprocessedoptions 238
\@wholewidth . . 271, 334

A

\AddToHook 138, 145, 154, 160
\AddToShipoutPicture 116, 117
\AddToShipoutPictureBG *1*, 114
\AddToShipoutPictureBG* *1*
\AddToShipoutPictureFG *1*, 114, 118
\AddToShipoutPictureFG* *1*
\advance 19, 20, 25, 26, 63, 64, 81, 83, 86, 89, 90, 91, 127, 128, 130, 131, 132, 135, 243, 315, 325
\AtBeginDocument 261, 286
\AtEndOfPackage . . . 238
\AtPageCenter . *2*, 11, 53
\AtPageLowerLeft *2*, 9, 27, 33
\AtPageUpperLeft *2*, 6, 9, 11, 43, 70, 92
\AtStockCenter . . . *2*, 45
\AtStockLowerLeft *2*, 14, 38, 48
\AtStockUpperLeft *2*, 35
\AtTextCenter . . . *2*, 100
\AtTextLowerLeft . *2*, 98
\AtTextUpperLeft *2*, 55, 98, 100

B

\begingroup 17, 57, 77, 189, 250, 256, 296

C

\c@page . . 21, 59, 80, 129
\changes 286
\ClearShipoutPicture 120
\ClearShipoutPictureBG *1*, 120
\ClearShipoutPictureFG *1*, 120
\cmd 286

\color 248
\colorbox 252
\csname . . . 197, 198, 200, 201, 203, 204
\CurrentOption 232, 233, 234

D

\def 206, 207, 208, 210, 211, 215, 219, 230, 266, 270, 271, 288, 291, 322
\define@key 197, 198, 200, 201, 203, 204, 206, 207, 208, 209
\divide 242
\do 232
\dottedline . . . 276, 278

E

\edef . 194, 195, 196, 234, 235, 289, 292
\else 21, 61, 66, 82, 85, 129, 199, 214, 218, 222, 265, 270, 281, 290, 322, 333, 345
\endcsname 197, 198, 200, 201, 203, 204
\endgroup 30, 73, 95, 191, 253, 259, 340
\ESO@color 187, 248, 298, 305
\ESO@colorbox 188, 249, 320, 330
\ESO@div 240, 299, 302, 306, 309, 313, 323
\ESO@dvipsfalse 168, 262
\ESO@dvipstrue 267
\ESO@fcolorbox 186, 255, 336
\ESO@gap 178, 196, 271, 276, 278
\ESO@gridBGfalse . . 169
\ESO@gridcolor 175, 206, 282, 305, 336
\ESO@gridDelta 174, 196, 289, 292, 306, 309, 310, 313, 314, 317, 323, 324, 327, 335
\ESO@griddelta 173, 195, 289, 292, 299, 302, 303
\ESO@gridDeltaY 174, 289, 292, 307, 314, 324, 335
\ESO@griddeltaY 173, 289, 292, 300
\ESO@gridfalse 168
\ESO@gridlines 180, 184, 185, 283
\ESO@gridpicture 295, 344, 346
\ESO@gridunit 171, 194, 241, 297
\ESO@gridunitname 170, 194, 322, 333, 337
\ESO@Hline . . . 184, 308
\ESO@hline 182, 276, 301
\ESO@HookI . . . 108, 111
\ESO@HookIBG 4, 102, 111, 115, 120, 141, 156
\ESO@HookIFG . 4, 105, 119, 123, 148, 162
\ESO@HookII . . . 109, 112
\ESO@HookIIBG 4, 103, 112, 115, 141, 142, 156, 157
\ESO@HookIIFG 4, 106, 119, 148, 149, 162, 163
\ESO@HookIII . . 110, 113
\ESO@HookIIIBG 4, 104, 113, 141, 156, 344
\ESO@HookIIIFG . . 4, 107, 148, 162, 346
\ESO@isMEMOIR . . . 4, 15, 36, 46, 55, 124
\ESO@labelfactor . . . 172, 195, 318, 328
\ESO@MEMOIR@corr 125, 139, 146
\ESO@subgridcolor . . 176, 207, 282, 298
\ESO@subgridlines 181, 182, 183, 276, 278
\ESO@subgridstyle 177, 208, 272
\ESO@tempdima 2, 18, 19, 20, 22, 28, 60, 62, 63, 64, 67, 71, 78, 81, 83, 86, 93, 126, 127, 128, 130, 131, 132, 140, 147, 241, 242, 243, 318, 319, 328, 329
\ESO@tempdimb 3, 24, 25, 26, 28, 69, 71, 88, 89, 90, 91, 93, 134, 135, 140, 147, 241, 242
\ESO@texcoordfalse 169, 199
\ESO@texcoordtrue . 199
\ESO@Vline . . . 185, 311
\ESO@vline 183, 278, 304
\ESO@yoffsetI 7, 134, 155, 161, 179, 288, 291
\ESO@yoffsetII 179, 288, 291, 303, 310
\evensidemargin . . . 83

F

\fbox 186, 190
\fboxrule 190, 334
\fboxsep 251, 257
\fcolorbox 258
\fi 23, 65, 68, 84, 87, 133, 199, 224, 225, 226, 267, 268, 270, 284, 285, 293, 321, 322, 331, 338, 347, 348
\filename@base 267
\filename@parse . . . 266
\fontsize 312

G

\g@addto@macro 115, 119, 344, 346
\Gin@driver . . . 265, 266
\global . . . 120, 123, 142, 149, 157, 163
\gridSetup . . 1, 193, 213, 217, 221, 223

H

\headheight 90
\headsep 91

I

\if@tempswa 199
\if@twoside 21, 58, 79, 129
\ifESO@dvips . . 168, 270

\ifESO@grid . . . 168, 342
\ifESO@gridBG . 169, 343
\ifESO@texcoord 169, 287
\IfFileExists . 245, 273
\ifnum 316, 326
\ifodd . . . 21, 59, 80, 129
\ifx 212, 216, 220, 265, 267, 272, 282, 322, 333

L

\LenToUnit *1*, 1
\let . 33, 43, 53, 111, 112, 113, 117, 120, 122, 123, 142, 149, 157, 163, 231, 238, 248
\line . 182, 183, 184, 185

M

\makebox . . 320, 330, 335
\multiply 317, 327
\multiput . 300, 303, 307, 310, 314, 324

N

\newdimen 2, 3
\newif 168, 169
\noexpand 236
\nointerlineskip 137, 153
\normalcolor 339
\normalfont 312

O

\oddsidemargin . . 81, 86

P

\p@ 217
\paperheight 10, 12, 25, 288, 291, 299, 304, 306, 311, 323
\paperwidth 12, 20, 62, 127, 131, 301, 302, 308, 309, 313
\ProcessOptionsWithKV 230, 239
\providecommand . 1, 229
\put 7, 10, 12, 28, 39, 49, 71, 93, 99, 101, 140, 147, 155, 161, 335

R

\relax 78, 88, 238, 241, 316, 317, 326, 327
\renewcommand . . . 5, 16, 37, 47, 249, 255, 276, 278, 283
\RequirePackage 167, 245, 246, 275
\reserved@a . . . 266, 267

S

\setkeys 202, 205, 228, 236
\setlength 297
\spinemargin . 60, 64, 67
\stockheight . 24, 39, 49
\stockwidth 18, 49, 128, 132

T

\textbf 337
\textheight 99, 101
\textwidth 63, 101
\the 320, 330
\thicklines . . . 283, 334
\thinlines . . . 180, 181
\topmargin 89
\trimedge 19, 22, 126, 130
\trimtop 26, 135

U

\unitlength 297
\uppermargin 69

Z

\z@ 190, 288, 291