

# Cheat sheet for pst-optexp (v5.1)

## General component parameters

labeloffset= $\langle num \rangle$   
labelstyle= $\langle macros \rangle$   
labelalign= $\langle refpoint \rangle$   
labelangle= $\langle num \rangle$   
labelref=relative, relgrav, global, absolute  
label= $\langle offset \rangle$  [ $\langle angle \rangle$ ] [ $\langle refpoint \rangle$ ] [ $\langle labelref \rangle$ ]  
innerlabel=true  
position= $\langle num \rangle$ , start, end  
abspos= $\langle num \rangle$ , start, end  
endbox=true, false  
angle= $\langle pstyle \rangle$   
rotateref= $\langle refpoint \rangle$   
compshift= $\langle num \rangle$   
compoffset= $\langle num \rangle$   
innercompalign=rel, relative, abs, absolute  
OptComp  $\langle pstyle \rangle$   
OptionalStyle  $\langle pstyle \rangle$   
VariableStyle  $\langle pstyle \rangle$   
addtoOptComp= $\langle list \rangle$   
newOptComp= $\langle list \rangle$   
optional=true, false

## Free-ray components

$\backslash lens$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

lensheight= $\langle num \rangle$   
lensradiusleft= $\langle num \rangle$   
lensradiusright= $\langle num \rangle$   
lensradius= $\langle left \rangle$  [ $\langle right \rangle$ ]  
lenswidth= $\langle num \rangle$   
lens= $\langle radiusleft \rangle$  [ $\langle radiusright \rangle$ ] [ $\langle height \rangle$ ] [ $\langle width \rangle$ ]  
thicklens=true, false

$\backslash optplate$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

plateheight= $\langle num \rangle$   
platelinewidth= $\langle num \rangle$  or  $\langle dimen \rangle$

$\backslash optretplate$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

platewidth= $\langle num \rangle$   
platesize= $\langle width \rangle$   $\langle height \rangle$

$\backslash pinhole$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

outerheight= $\langle num \rangle$   
innerheight= $\langle num \rangle$   
phlinewidth= $\langle num \rangle$  or  $\langle dimen \rangle$   
phwidth= $\langle num \rangle$

$\backslash optbox$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

optboxwidth= $\langle num \rangle$   
optboxheight= $\langle num \rangle$   
optboxsize= $\langle width \rangle$   $\langle height \rangle$

$\backslash optarrowcomp$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

arrowcompwidth= $\langle num \rangle$   
arrowcompheight= $\langle num \rangle$   
arrowcompsize= $\langle size \rangle$  or  $\langle width \rangle$   $\langle height \rangle$   
arrowcompangle= $\langle num \rangle$   
arrowcompshape=rectangle, circle  
ArrowCompStyle  $\langle pstyle \rangle$

$\backslash optbarcomp$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

barcompwidth= $\langle num \rangle$   
barcompheight= $\langle num \rangle$   
barcompsize= $\langle size \rangle$  or  $\langle width \rangle$   $\langle height \rangle$   
barcompangle= $\langle num \rangle$   
barcompshape=rectangle, circle  
BarCompStyle  $\langle pstyle \rangle$

$\backslash optsource$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

sourcewidth= $\langle num \rangle$   
sourceheight= $\langle num \rangle$   
sourcesize= $\langle width \rangle$   $\langle height \rangle$

$\backslash crystal$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

crystalwidth= $\langle num \rangle$   
crystalheight= $\langle num \rangle$   
crystalsize= $\langle width \rangle$   $\langle height \rangle$   
caxislength= $\langle num \rangle$   
caxisinv=true, false  
voltage=true, false  
lamp=true, false  
CrystalCaxis  $\langle pstyle \rangle$   
CrystalLamp  $\langle pstyle \rangle$

$\backslash optdiode$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

optdiodesize= $\langle num \rangle$

$\backslash doveprism$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

doveprismsize= $\langle num \rangle$  or  $\langle width \rangle$   $\langle height \rangle$

$\backslash glanthompson$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

glanthompsonwidth= $\langle num \rangle$   
glanthompsonheight= $\langle num \rangle$   
glanthompsonsize= $\langle width \rangle$   $\langle height \rangle$   
glanthompsongap= $\langle num \rangle$

$\backslash polarization$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

polsize= $\langle num \rangle$   
poltype=parallel, perp, misc, lcirc, rcirc  
Polarization  $\langle pstyle \rangle$

$\backslash mirror$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle center \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

mirrorwidth= $\langle num \rangle$   
mirrorlinewidth= $\langle num \rangle$  or  $\langle dimen \rangle$   
mirrorradius= $\langle radius \rangle$  [0]  
mirrortype=plain, piezo, extended, semitrans  
variable=true, false  
mirrordepth= $\langle num \rangle$   
ExtendedMirror  $\langle pstyle \rangle$   
PiezoMirror  $\langle pstyle \rangle$   
SemitransMirror  $\langle pstyle \rangle$

$\backslash parabolicmirror$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

parmirrorwidth= $\langle num \rangle$   
parmirrorheight= $\langle num \rangle$

$\backslash oapmirror$  [ $\langle options \rangle$ ] ( $\langle in \rangle$ ) ( $\langle center \rangle$ ) ( $\langle focus \rangle$ ) { $\langle label \rangle$ }

oapmirroraperture= $\langle num \rangle$  or  $\langle inner \rangle$   $\langle outer \rangle$

$\backslash beamsplitter$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle center \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

bsize= $\langle num \rangle$   
bsstyle=cube, plate

$\backslash optgrating$  [ $\langle opt \rangle$ ] ( $\langle in \rangle$ ) ( $\langle center \rangle$ ) ( $\langle out \rangle$ ) { $\langle label \rangle$ }

gratingwidth= $\langle num \rangle$   
gratingheight= $\langle num \rangle$   
gratingdepth= $\langle num \rangle$   
gratingcount= $\langle int \rangle$   
gratingtype=blazed, binary  
gratingalign=t, top, c, center

```

reverse=true, false
gratinglinewidth=<num> or <dimen>
\transmissiongrating[<opt>](<in>)(<center>)(<out>){<label>}
\optaom[<options>](<in>)(<trans>)(<diff>){<label>}
aomheight=<num>
aomwidth=<num>
aomsize=<width> <height>
aomgratingcount=<int>
aomalign=symmetric, straight
aomreflalign=perp, parallel
aomcomp=default, <macro>
diffractionorders=<int>
beamdiffractionorder=<int>
\optprism[<opt>](<in>)(<center>)(<out>){<label>}
prismsize=<num>
prismangle=<num>
prismtype=transmittive, reflective
prismalign=auto, center
\rightangleprism[<opt>](<in>)(<center>)(<out>){<label>}
raprismsize=<num>
raprismalign=auto, center
\pentaprism[<opt>](<in>)(<center>)(<out>){<label>}
pentaprismsize=<num>

```

## Fiber components

```

usefiberstyle=true, false
usewirestyle=true, false
\optfiber[<opt>](<in>)(<out>){<label>}
fiberloops=<int>
fiberloopradius=<num>
fiberloopsep=<num>
\optamp[<opt>](<in>)(<out>){<label>}
optampsize=<num> or <width> <height>
\optmzm[<opt>](<in>)(<out>){<label>}
optmzmsize=<num> or <width> <height>
\polcontrol[<opt>](<in>)(<out>){<label>}
polcontrolsize=<num>

```

```

polcontroltype=linear, triangle
\optisolator[<opt>](<in>)(<out>){<label>}
isolatorsize=<num> or <width> <height>
IsolatorArrow <psstyle>
\optswitch[<opt>](<in>)(<out>){<label>}
switchsize=<num> or <width> <height>
switchstyle=opened, closed
\fiberdelayline[<opt>](<in>)(<out>){<label>}
fdlsize=<num> or <width> <height>
FdArrow <psstyle>
\optfiberpolarizer[<opt>](<in>)(<out>){<label>}
fiberpolsize=<num> or <width> <height>
\optcirculator(<left>)(<right>)(<bottom>){<label>}
optcircsize=<num>
optcircangleA=<num>
optcircangleB=<num>
optcircangle=<num> <num>
OptCircArrow <psstyle>
\optcoupler(<tl>)(<bl>)(<tr>)(<br>){<label>}
\wdmcoupler(<tl>)(<bl>)(<r>){<label>}
\wdmsplitter(<l>)(<tr>)(<br>){<label>}
couplersize=<num> or <width> <height>
couplersep=<num>
couplertype=none, ellipse, rectangle, cross
coupleralign=t, top, b, bottom, c, center
VariableCoupler <psstyle>
\fiberbox(<in>)(<out>){<label>}
fiberboxwidth=<num>
fiberboxheight=<num>
fiberboxsize=<width> <height>
fiberboxsepin=<num>
fiberboxsepout=<num>
fiberboxcount=<N>x<M>

```

## Electrical components

```

\eleccoupler(<tl>)(<bl>)(<tr>)(<br>){<label>}
eleccouplersize=<size> or <width> <height>

```

```

eleccouplersep=<num>
eleccouplertype=standard, directional
eleccouplerinput=left, right
\elecsynthesizer(<in>)(<out>){<label>}
synthsize=<size> or <width> <height>
synthtype=sine, pulse, sawtooth, rectangle,
triangle, custom
synthshape=circle, rectangle
SynthStyle <psstyle>
\elecmixer(<left>)(<right>)(<bottom>){<label>}
elecmixersize=<num>

```

## Hybrid components

```

\optfilter[<opt>](<in>)(<out>){<label>}
filtersize=<num>
filtertype=bandpass, bandstop, lowpass,
highpass
filterangle=<num>
FilterStyle <psstyle>
\fibercollimator(<in>)(<A>)(<B>)(<out>){<label>}
fibercolsize=<num> or <width> <height>
\optdetector[<opt>](<in>)(<out>){<label>}
detsize=<num> or <width> <height>
detttype=round, diode
DetectorStyle <psstyle>

```

## Special nodes

```

\oenode{<node>}{<comp>}
namingscheme=old, new
showoptdots=true, false
compname=<string>
\oenodeRefA{<comp>}
\oenodeRefB{<comp>}
\oenodeTrefA{<comp>}
\oenodeTrefB{<comp>}
\oenodeCenter{<comp>}
\oenodeLabel{<comp>}

```

```
\oenodeExt{<comp>}
  extnode=<refpoint>
  extnodealign=rel, relative, abs, absolute
  extnodes=<list>
```

```
\oenodeIfc{<num>}{<comp>}
\oenodeIn{<comp>}
\oenodeOut{<comp>}
\oenodeRotref{<comp>}
\oenodeBeam{<num>}
\oenodeBeamUp{<num>}
\oenodeBeamLow{<num>}
\oeBeamCenter{<num>}
\oeBeamVec{<num>}
\oeBeamVecUp{<num>}
\oeBeamVecLow{<num>}
\oeBeamVecMedian{<num>}
```

## Connecting components

```
\drawbeam[<options>]{<obj1>}{<obj2>}...
```

```
  raytrace=true, false
  useNA=true, false
  n=<code>
  beampos=[<x> ]<y>
  beamangle=<pscode>
  beamalign=rel, relative, abs, absolute,
    firstcomp
  beampathskip=<num>
  beampathcount=<num>
  beaminside=true, false
  beaminsidefirst=true, false
  beaminsidelast=true, false
  allowbeaminside=true, false
  forcebeaminside=true, false
  startinsidecount=<num>
  stopinsidecount=<num>
  beammode=refl, trans, reflective, transmittive,
    auto
  beamnodealign=vec, conn, vector, connection
```

```
\optplane(<center>)
  beam=true, false
```

```
Beam <psstyle>
addtoBeam=<list>
newBeam=<list>
ArrowInsideMinLength=<pscode>
ArrowInsideMaxLength=<pscode>
fade <linestyle>
fadeto=white, black, transparency
fadepoints=<num>
fadefuncname=gauss, linear, squared, exp,
  custom
fadefunc=<PS code>
```

```
\drawwidebeam[<options>]{<obj1>}{<obj2>}...
  beamwidth=<pscode>
  beamdiv=<pscode>
  pswarning=true, false
  savebeampoints=true, false, <int>
  loadbeampoints=true, false, <int>
  savebeam=true, false, <int>
  loadbeam=true, false, <int>
  startinside=true, false
  stopinside=true, false
```

```
\drawfiber[<options>]{<obj1>}{<obj2>}...
  fiberalign=rel, relative, center, abs,
    absolute
  fiberangleA=<num>
  fiberangleB=<num>
  startnode=auto, N, 1, 2, ...
  stopnode=auto, N, 1, 2, ...
  Fiber <psstyle>
  addtoFiber=<list>
  newFiber=<list>
  fiberstyle=<string>
```

```
\drawwire[<options>]{<obj1>}{<obj2>}...
  wirealign=rel, relative, center, abs,
    absolute
  wireangleA=<num>
  wireangleB=<num>
  wirestyle=<string>
  addtoWire=<list>
  newWire=<list>
  Wire <psstyle>
```

```
  fiber=[*+]none, all, i, o, <refpoint>
  wire=[*+]none, all, i, o, <refpoint>
```

```
\begin{optexp}...\end{optexp}
\backlayer{<code>}
\frontlayer{<code>}
```

## Custom components

```
\optdipole[<options>](<in>)(<out>){<comp>}{<label>}
\opttripole[<options>](<in>)(<center>)(<out>){<comp>}{<label>}

  optdipolesize=<width>[ <height>]
  optdipolecomp=<macros>
  opttripolecomp=<macros>

\newOptexpDipole[<fixopt>]{<name>}{<dftopt>}
\newOptexpTripole[<fixopt>]{<name>}{<dftopt>}
\newOptexpFiberDipole[<fixopt>]{<name>}{<dftopt>}
\newOptexpElecDipole[<fixopt>]{<name>}{<dftopt>}
```

## Additional information

```
showifcnodes=true, false
IfcNodeStyle <psstyle>
showinterfaces=true, false
IfcStyle <psstyle>
```