

# Optickle: Function Reference

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## **Abstract**

Optickle is a general model for the electro-opto-mechanical part of an interferometric GW detector. It ventures into mechanics only as far as is necessary to include radiation pressure effects, and into electronics only far enough to produce demodulation signals, and into



## 2.1 Initializing a New Model

Creating a new Optickle model is easy. Like any other class, you need only call the class constructor, which is a function with the class as its name.

```
opt = t wi6ikle(vFrf, lambda)
```

*[opt, sn] = addBeamSplitter(opt, name, aio, Chr, Thr, Lhr, Rar, Lmd, Nmd)*

---

<b>aio</b>	angle of incidence (in degrees)
<b>Chr</b>	curvature of HR surface (Chr = 1 / radius of curvature)
<b>Thr</b>	power transmission of HR surface
<b>Lhr</b>	power loss on re°ection from HR surface
<b>Rar</b>	power re°ection of AR surface
<b>Nmd</b>	

```
opt = addReadout(opt, name, fphi, names)
```

---

**fphi**



outName

$$n = I4(inoutNaIn(opt,)-357(name,)-358(umame)))TJET0.4w84.42-137.53271132.42-137.1.46TD[(outName)]TJ/F97239.24.$$

$$n = getFieldIn(opt, name, inName)$$

name	name of the optic
inName	name of an input to the optic
n	index of input field (e.g., in fDC returned from tickle)

$$n = getFieldOut(opt, name, outName)$$

name	name of the optic
outName	name of an output from the optic

*name = getProbeName(opt, snPrb)*

---



*opt* = *addDriveO*<sup>@</sup>*set*(*opt*, *nDrv*, *pos*)

---

$$\frac{[fDC, sigDC] = sweep(opt, pos)}{pos}$$



### 3.1 BeamSplitter

[FIGURE OF MIRROR]

Mirrors can be used for everything from core interferometer optics



getQuantityForInputs for this optic, as seen at itsgetoutputsgetNoiReactrix

getNoiseMatrix