

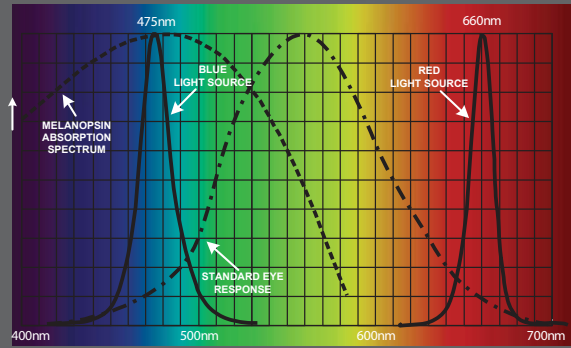
# Wavelength Dependant Pupillary Light Response

Immediate non-invasive ocular disease screening



As represented by this graph, emission from both the blue and red light sources of the BPI-50 overlap the standard eye response. Either color stimulates the rod-cone photoreceptor pathway.

There is virtually no output from the red source within the absorption spectra of the melanopsin pathway. Only the blue source will elicit a melanopsin mediated PLR.



Observing PLR while introducing light from a calibrated red and blue source, it may be possible to differentiate a healthy eye from one affected by disease or other source of damage.

The RetinoGraphics BPI-50 is a calibrated light source with peak blue light emission at 465nm and peak red emission at 660nm. Each color light source can be operated in high or low intensity modes.

After the patient has been dark adapted, low intensity red light is introduced to the first eye while PLR is observed.

Normal pupillary constriction indicates that no further information need be collected by using either high intensity red or blue light stimulus and thus concludes testing for an eye presenting this response to low intensity red stimulus.

An abnormal low intensity red PLR indicates that it is appropriate to proceed with high intensity red and then blue stimulus.

Careful observation of pupillary behavior during red and blue light stimulus can be compared with the chart below to assist in evaluating possible causes of abnormal PLR responses.

Dark adapted eye	Low intensity Red	High intensity Red	High intensity Blue	Indication / Possible cause	
<p>Baseline</p>	<p>Normal PLR</p>			Proceed to fellow eye	
	<p>No PLR</p>	<p>No PLR</p>	<p>Delayed PLR</p>	SARDS (Sudden Acquired Retinal Degeneration)	
		<p>Absent or reduced PLR</p>	<p>Absent or reduced PLR</p>		Glaucoma, Optic Neuritis, Meningitis
		<p>Partial constriction</p>	<p>Delayed / complete constriction</p>		Immune-Mediated Retinitis
	<p>*Pupillary escape: "1" denotes initial PLR "2" denotes PLR after several seconds of unchanged illumination intensity</p>	<p>Delayed PLR or Pupillary escape</p>	<p>Delayed PLR or Pupillary escape</p>		Chorio-Retinitis, Retinal Detachment