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Service Department

FIELD SERVICE BULLETIN

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Vision-S Calibration Procedure

PRODUCT   Chameleon Vision-S Lasers

PURPOSE   Inform Field Service Engineers of the Vision-S calibration method

DESCRIPTION   With Vision-S systems it is more critical to have an accurate calibration as the effective mode locking window at longer wavelengths is much smaller than the Chameleon Ultra design. There is also no Q-switching beyond approximately 850nm. When mode locked at wavelengths approaching 1050nm the system will not go into CW or Q-switching when the pump power is reduced – **it will drop lasing**.

Since the Vision-S is much more sensitive at longer wavelengths it is more likely that a system will need to be calibrated on install.

CALIBRATION   1.1 Set the system on a tuning cycle within the full working tuning range until the piezo voltages settle into a flat cycle.

1.2 Enter the calibration menu and begin calibrating at 690nm. Usually there will be Q-switching from 690nm to approximately 850nm.

1.3 Once beyond these wavelengths i.e. >850nm, the Q-switching value should be set at the lowest power that the system will start (mode lock) at.

1.4 As you progress through the tuning range towards 1050nm it is normal for this window to reduce in size. An example of the window size is shown below.

Modelocking Window

Window (W) vs *Wavelength (nm)*
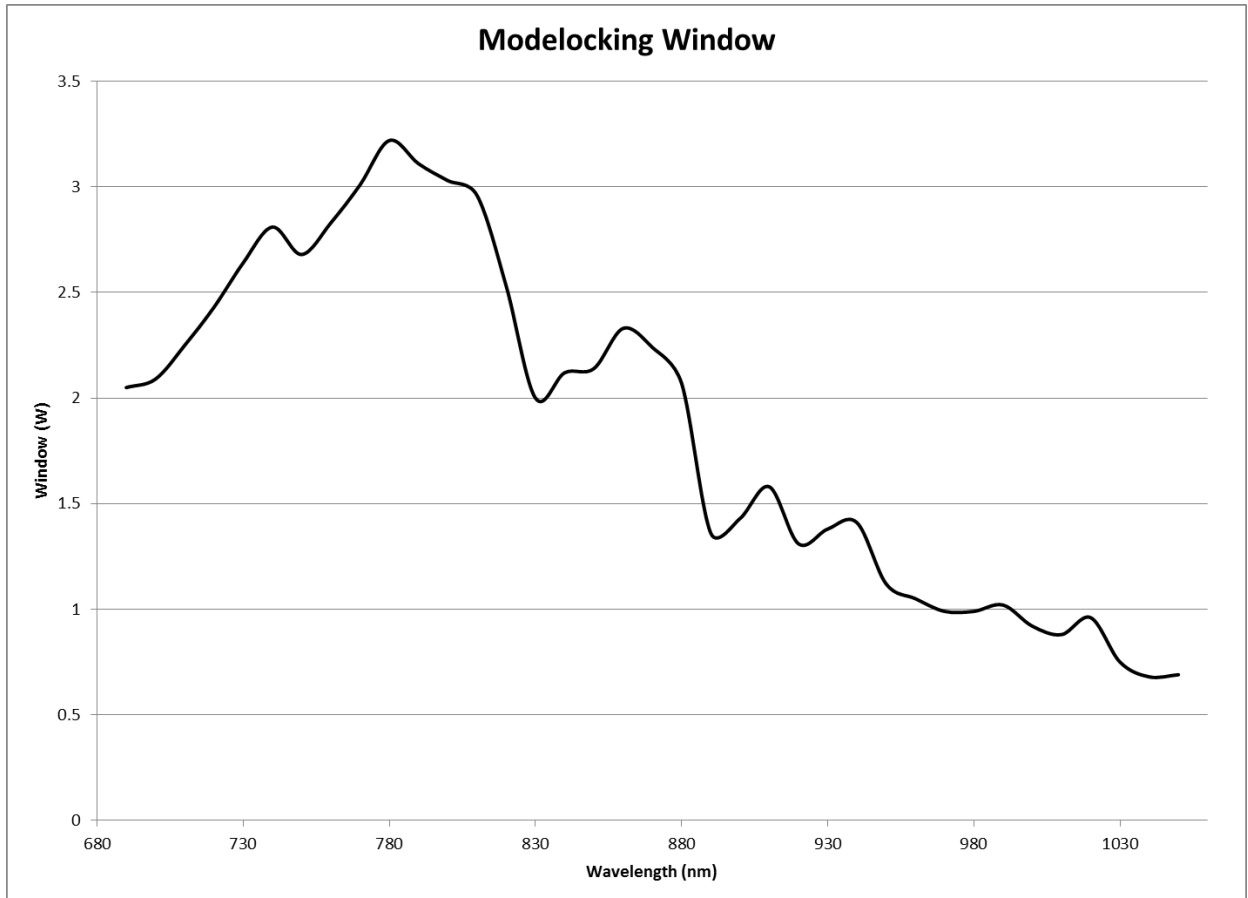
1.5 More care must be taken when calibrating wavelengths which have a small starting window as setting values too low could result in no starting and setting them too high will result in a CW component on the pulse.

1.6 Once the calibration is complete tune the system every 20nm and disturb modelocking (e.g. by tapping the table). Make sure that the system regains modelocking across the whole tuning range. If this is not the case then repeat calibration at the points in question.

NOTE   The manufacturing spec for the size of the mode locking window is >0.5W however if there has been slight movement during shipping then it would be likely that the window will be below this value. If this happens then it may be necessary to slightly raise the Q-switching value (so that the window is below 0.5W) to make sure that the 80% pump power is high enough to allow the system to mode lock but not so high that a CW component appears.

If a system does not lase above a certain wavelength then it is almost certain that the pump power is too low and a re-calibration is needed.

PSE: OM