



530 Main Street, Acton, MA 01720

**Phone:** (978)263-3584, **Fax:** (978)263-5086

**Web Site:** [www.acton-research.com](http://www.acton-research.com)

**Instructions  
for  
Setup and Operation of the SHC-EXT  
NCL/CCD**

**Description:**

The ARC Model SHC-EXT is a shutter control box to be used with the ARC shutter.

**Setup:**

When setting up the shutter, plug the cable from the shutter into the circular two pin connector labeled SHUTTER into the rear panel of the SHC-EXT box. Use the interconnect cable provided to connect from the 8 pin DIN connector in the rear panel labeled CNTRL to the 6 pin DIN connector at SHUTTER1 or SHUTTER2 on the rear panel of the NCL. Shutter1 is the typical connection unless an additional shutter is being controlled. If using a CCD connect the cable from the CCD head into the circular two pin connector labeled CCD in the rear panel of the SHC-EXT.

Please note that under normal operation, the Acton Research Corporation SpectraSense and NCL Data Acquisition System operate with a normally closed shutter for safety reasons. The software permits opening the shutter only during a scan and allows closing the shutter at designated wavelength safety zones during the scan. This mode of operation is still possible with the front panel switch in the CLOSE/NCL position. With the NCL power switched on, setting the switch from the NCL to the OPEN/OVERRIDE position will force the shutter to remain open as long as the switch is in the OPEN/OVERRIDE position and power is on to the NCL. In this mode, the software has no control of shutter operation. If power is switched off to the NCL, the shutter will close and it is then necessary to switch the power on to the NCL and switch the front panel switch from OPEN/OVERRIDER to CLOSE/NCL and back to OPEN/OVERRIDE to force the shutter to remain open. For CCD control set digital output #1 in the NCL to a low state, or disconnecting power to the SHC-EXT box.