



## P4120 – Genesys 20 Spectrophotometer Technical and Usage Information

### General:

This information sheet pertains to the instrument's use as part of the WINDose Dosimetry System. Specific information is provided regarding the use of the system for the measurement of GEX B3 film dosimeters. For specific information on the measurement of other dosimeters with this spectrophotometer please contact GEX Corporation Customer Service. Detailed information on the Genesys 20 is provided in GEX Technical Memo 100-210 and the Genesys 20 Manual. GEX documents referenced here are available at [www.gexcorp.com](http://www.gexcorp.com).

### Genesys 20 Manual:

Please refer to the Genesys 20 Spectrophotometer Manual for explicit detail on the specifications, operation, performance verification and general care of the instrument. Information supplied herein should be considered supplemental.

### Performance Verification:

The instrument was performance verification tested by both Thermo Electron Corporation and by GEX Corporation prior to shipment. There are two performance verification tests, one performed by the instrument automatically when it is turned on; the other must be performed by the user.

*POST Verification:* The instrument performs a series of tests each time the unit is turned on. This is called POST (Power On Self Test). GEX recommends that users turn the instrument off and on at least once each day if the instrument is used continuously, so that the instrument may run its POST testing daily.

*Verification of Optical Performance using Certified Filters:* GEX recommends the use of Spectronic Standards (GEX part# P4220) for the performance of verification testing, although other filters may be used instead. Follow the instructions in GEX Procedure 100-254 which are in compliance with procedures in the Spectronic Standards Manual. This will test the instrument for Stray Light, Wavelength Accuracy and Photometric Performance. GEX recommends performing this testing every 30 days (monthly).

**Calibration:** This instrument cannot be calibrated in the field. The instrument should not require calibration unless it fails performance verification. Calibration is performed at the manufacturing site or by an authorized vendor. Contact GEX for details.

### Validation:

The user should validate the instrument according to their company procedures for equipment/process validation.

### Routine Operation:

The instrument is set at GEX Corporation with a default wavelength at start-up of 552nm. This is the recommended wavelength of measurement for B3 film dosimeters. Dosimeter measurements should be made with the instrument set in the absorbance mode of operation. NOTE: Historically, the analysis wavelength for B3 dosimeters was stated at 554nm. This has been re-evaluated and changed. For more information see GEX Technical Memo's 100-205 and 100-210.

GEX has designed specialized dosimeter holders for our WINDose and DoseStix style dosimeters. To ensure highly repeatable measurements, ensure that the cell holder (aka Cuvette Cup) is always inserted firmly and 'snapped' into place when making measurements. See the inserts for each specific type of dosimeter holder separately.

Instrument start up:

- Remove the dosimeter and cell holder and turn on the instrument.
- Allow the instrument to warm up for at least 30 minutes.
- Insert the cell holder with dosimeter holder.
- Close the sample compartment lid and press the "0 ABS" button.

### Care and Maintenance:

*Cleaning:* Optimal instrument performance is always achieved when the instrument is kept clean. Use good housekeeping practices to maintain the instrument appearance and function. Never open the instrument casing. GEX suggests the use of compressed air to clean the sample compartment on a regular basis.

*Lamp Replacement:* See the manual for detailed instructions on lamp replacement. Instrument performance verification should always be performed before and after a lamp replacement. This is critical because replacing the lamp is the only operation a user performs that is a physical change to the instrument!

*Cuvette Holder Replacement:* Over time, the spring in the cuvette holder will wear and will affect the repeatability of measurements. Replace the cup at specified intervals depending on the amount of use. Replacement is GEX part# P4121.

### Warranty:

The Genesys 20 is supplied with a one year manufacturer's warranty. User modifications are not warranted and are the sole responsibility of the user. See the manufacturer warranty information for more details.