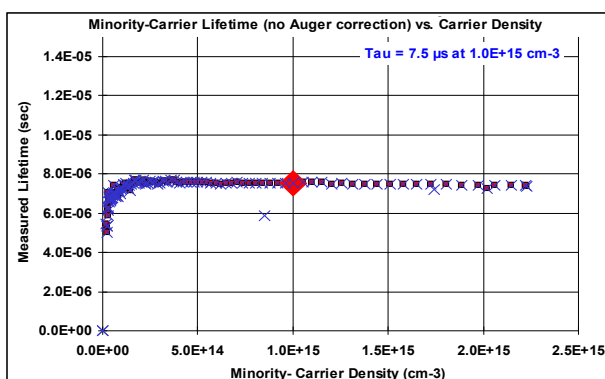


## Applications

- Monitoring initial material quality
- Detecting heavy metals contamination during wafer processing
- Evaluating surface passivation and emitter dopant diffusion
- Step-by-step monitoring and optimization of fabrication process
- Providing a contactless, implied IV curve at any stage of solar cell processing

## Key Features

- Single-click identification of key characteristics of silicon wafers:
  - Sheet resistance: 3 to 1000 (undoped)  $\Omega/\text{sq}$
  - Lifetime: 10ns to greater than 10ms
  - Trap density
  - Emitter saturation current density
  - Implied voltage
- Calibrated minority carrier lifetime vs. injection level, independent of carrier profile
- Suitable for single or multicrystalline wafers
- Instantaneous, high-resolution measurement
- Simple, software-controlled sensor tuning



*Sinton Consulting's analysis yields a calibrated carrier injection level for each wafer, so you can interpret lifetime data in a physically precise way.*



*The WCT-120 is an affordable, tabletop silicon lifetime and wafer metrology system, suitable for both device research and industrial process control.*

## System Components

- WCT-120 instrument, signal connector box, signal cables
- Programmable flashlamp with bandpass filter
- Computer with installed, configured software:
  - Windows OS
  - MS Office
  - Antivirus software
- Sinton Consulting data acquisition and analysis software package
- 12-bit DAQ card with 2-channel simultaneous sampling and common-mode rejection
- Optional: Suns-Voc accessory

**WCT-120**  
**Silicon Wafer Lifetime Tester**

**Sinton Consulting, Inc.**

+1.303.945.2113 (ph)  
+1.303.945.2199 (fax)  
www.sintonconsulting.com

**Product Overview**

WCT testers showcase our unique measurement and analysis techniques, including the Quasi-Steady-State photoconductance (QSSPC) lifetime measurement method. This technique is ideal for monitoring multicrystalline wafers, heavy diffusions, or low lifetime samples, and makes the WCT a highly regarded research and process tool.

The QSSPC lifetime measurement also yields the implied open-circuit voltage (vs. illumination) curve, which is comparable to the final I-V curve at each stage of a solar cell process.

**Product Specifications**

Wafer size, standard configuration	38-210 cm diameter std. Other sizes possible with user calibration.
Wafer thickness range	10 - 2000 $\mu\text{m}$ (calibrated) Other thicknesses may be measured.
Measurement modes, standard configuration	QSS, Transient, Generalized lifetime analysis
Other standard modes	Bias light hardware and analysis White-light and IR illumination Emitter saturation current analysis Resistivity measurement
Typical calibrated injection range	$10^{12}$ - $10^{16}$ $\text{cm}^{-3}$
A/D converter resolution	12-bit, up to 5MS/s
Ambient operating temperature	20°C - 25°C
Power requirements	WCT-120: 40W Computer with monitor: 200W Light source: 60W
Dimensions	22.5 cm W x 28 cm D x 57 cm H
Universal mains voltage	100-230VAC 50/60Hz
Warranty	One year limited warranty on all parts and software.



*The WCT-120 with Suns-Voc accessory stage: the ideal process control setup.*

**Purchase**

For a quote, please contact [quotes@sintonconsulting.com](mailto:quotes@sintonconsulting.com) or fax a request to the number above.

We are happy to accommodate custom requirements, please inquire about a quote for your specific needs.

For our full product line, please visit: [www.sintonconsulting.com/products.htm](http://www.sintonconsulting.com/products.htm)

Quotes are valid for 60 days. Please allow 8-10 weeks for delivery from the purchase order date.

