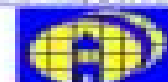




# Nanolab Equipment Manual



Chapter 4.18

## **Crestec CABL-9510CC**

### ***High Resolution Electron Beam Lithography System***

(crestec - 384)

#### **1.0 Title**

Crestec CABL-9510CC Electron Beam Lithography System

#### **2.0 Purpose**

The Crestec CABL-9510CC High Resolution Electron Beam Nanolithography System is a high precision e-beam lithography tool (writer) capable of resolving 10 nanometer features on substrate sizes ranging from 1 cm to 15.2 cm (6") at thickness of 0.01 cm to 0.46 cm. This tool is also capable of handling mask sizes ranging from 5.1 cm (2" mask) to 12.7 cm (5" mask) at standard thicknesses.

#### **3.0 Scope**

This document describes the necessary information to prepare samples for exposure, as well as the operation of the Crestec model CABL-9510CC, a High Resolution E-Beam Nanolithography System located in the Mervell Nanofabrication Laboratory (MNL).

#### **4.0 Applicable Documents**

- 4.1 Crestec E-beam Writer under Equipment on the MNL Home Page website.
- 4.2 Crestec CABL-8000C High Resolution Electron Beam Lithography System Instruction Manual at 3M54 bay of the MNL.
- 4.3 Crestec Icmo Training Text (Polygon) and Training E-Manuals for editing the imported GDS file, convert and export to cpg file to be used on the Crestec.

#### **5.0 Definitions & Process Terminology**

- 5.1 **Palette Holder** - Sample holder.
- 5.2 **Field Size Setting** - Choice of exposing field size: 60  $\mu\text{m}$ , 120  $\mu\text{m}$ , 300  $\mu\text{m}$ , 600  $\mu\text{m}$  or 1200  $\mu\text{m}$ .
- 5.3 **Dot** - Choice of number of dots per field: 20,000 dots, 60,000 dots or 240,000 dots in vector scan mode. 4,000 dots can only be used in vector- analog mode. Raster scan mode is fixed at 10,000 dots.
- 5.4 **Chip** - Entire design layer or exposure field. Center of the field on the layout is considered as 0, 0 for the X and Y coordinates.
- 5.5 **Field** - Part of the design area. Left bottom corner of the field is considered as 0, 0 for the X and Y coordinates.
- 5.6 **Element** - One design pattern.
- 5.7 **CON** - A condition file created based on the field pattern data.
- 5.8 **Export** - Transfer the condition file in the correct format, so that the Crestec pattern generator system can recognize it for pattern writing.

# Crestec Manuals

**Lei Shi**



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