

# Q150GB

A turbomolecular-pumped coating system  
for SEM, TEM and many thin-film applications

## Glove box coating system



*The Q150GB features:*

- Modular system for mounting in glove boxes
- Integral glove box pressure monitoring
- Metal sputtering, carbon evaporation – or both
- Remote operation from touchscreen control panel
- Fine grain sputtering
- High vacuum turbo pumping
- Thickness control using film thickness monitor

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## Q150GB

### Turbo Pumped System for Glove Box Use

The Q150GB is available as a single platform incorporating: sputtering, carbon evaporation and metal evaporation. Depending upon the selected configuration, the Q150GB can be a top-of-the-range sputter coater for high resolution scanning electron microscopy (SEM), a carbon coater suitable for SEM and transmission electron microscopy (TEM), or both, in a single easy to use system.

A modular design enables the vacuum chamber to be mounted through the base of the glove box or when supplied with optional feedthroughs, inside the glove box when modification to the glove box floor is not possible. A separate power supply housed in a rugged case is designed to be floor mounted and can be positioned conveniently beneath the glove box or bench. The touch screen user interface is housed in a robust stainless steel case and can be positioned ergonomically for the operator outside of the glove box environment.

The ability of the Q150GB to rapidly sputter a wide selection of oxidising and non-oxidising metals also makes it an ideal platform for many thin film applications.



## Main features

### Vacuum module mounted in the floor of the glove box

A cut out is made in the floor of the glove box and the vacuum chamber is fitted and sealed with the gasket supplied. Connections from the floor mounted power supply, vacuum pump and argon gas can then be made externally direct to the chamber assembly.

### Vacuum module placed inside the glove box

The chamber assembly is placed inside the glove box and the power supply, vacuum pump and argon gas connections are made through two KF40 feedthroughs in the rear of the glove box.

### Colour touch-screen in stainless steel case

Mounted at a convenient position outside the glove box, the colour touch screen allows multiple users to input and store coating protocols.

### Vacuum module assembly

Houses all the working components, including the efficient 70L/s air-cooled turbo molecular pump. Automatic bleed control ensures optimum vacuum conditions during sputtering. A full range active gauge is fitted as standard to monitor the vacuum. The Q150GB includes "vacuum shutdown" which enhances vacuum performance by allowing the chamber vacuum to be maintained when the system is not in use.

A unique feature of the Q150GB is the integral pressure interlock switch. This independently monitors the pressure inside the glove box and shuts off the vacuum pump if the glove box atmosphere is unacceptably reduced due to a vacuum leak.

The vacuum chamber is 214mm high for increased source to substrate distance and for coating large specimens. It has an external diameter of 165mm and comes with an integral implosion guard. The chamber assembly is easily removed to facilitate sample loading and cleaning.

A variable speed rotary specimen stage is fitted as standard, with full height adjustment from 0 to 190mm above the base plate, various other stages are available as options.

## Sputter coating, carbon coating or metal evaporation?

**Sputter** – a high resolution sputter coater for oxidising and non-oxidising (noble) metals. A wide selection of sputtering targets are available, including iridium and chromium, which are highly recommended for FE-SEM applications.

**Carbon coating** – a high vacuum carbon coater, ideal for the production of highly stable carbon films and surface replicas for transmission electron microscopy (TEM). The system uses economical 3.05mm diameter carbon rods.

**Metal evaporation** – a quick change insert that allows metal evaporation from tungsten baskets or Molybdenum boats, ideal for thin film applications. For ease of loading, the metal charge can be loaded into the evaporation source away from the vacuum chamber. More convenient when using gloves.

The deposition inserts can be swapped in seconds and the intelligent system logic automatically recognises which insert is in place and displays the appropriate operating settings.

Each of the above configurations can be used with a range of optional accessories (eg film thickness monitor and various stage configurations). *See options for details.*

### Rapid data entry

At the operational heart of Q150GB is a simple colour touch screen, which allows even the most inexperienced or occasional operators to rapidly enter and store their own process data. To further aid ease of use a number of typical sputtering and evaporation profiles are provided.



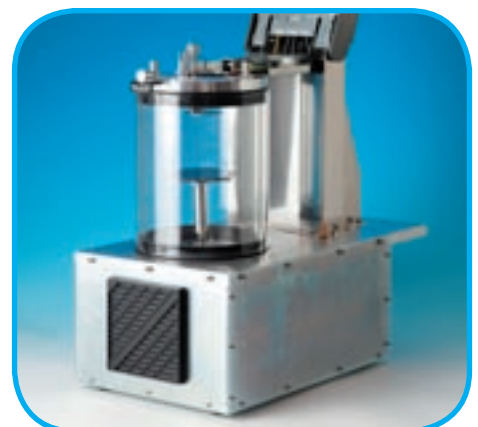
*Q150GB mounted in a glove box*



*Sputter head*



*Metal evaporation head*



*Vacuum chamber assembly*

## Ordering Information

**NB:** For a full quotation, including on-site installation and customer training, please contact us or our local distributor

<b>Q150GB</b>	High-resolution turbomolecular pumped sputter coater, including a TK8845 57mm Ø x 0.3mm chromium target and high vacuum carbon rod evaporation coater for 3.05mm Ø carbon rods
<b>13137</b>	Glove box Conversion Kit. ( <i>Only required if vacuum chamber is placed inside the glove box.</i> ) Requires 2 x KF 40 ports at rear of glove box. Includes vacuum, argon gas and electrical feedthroughs for all interconnection cables
<b>Pumping</b>	Rotary pump requirements ( <i>needs to be ordered separately</i> ):
<b>13034</b>	5m <sup>3</sup> hr <sup>-1</sup> 2 stage oil sealed rotary vane pump

### Optional accessories

<b>Sputter Targets</b>	The Q150GB is fitted with a 0.3mm thick chromium sputter target (TK8845) as standard. <i>Other optional targets:</i>
<b>SC502-314A</b>	57mm Ø x 0.1mm Gold*
<b>SC502-314B</b>	57mm Ø x 0.1mm Gold/Palladium (80/20)*
<b>SC502-314C</b>	57mm Ø x 0.1mm Platinum*
<b>SC502-314D</b>	57mm Ø x 0.1mm Nickel*
<b>SC502-314E</b>	57mm Ø x 0.1mm Silver*
<b>SC502-314G</b>	57mm Ø x 0.1mm Palladium*
<b>SC502-314H</b>	57mm Ø x 0.1mm Copper*
<b>TK8845</b>	57mm Ø x 0.3mm Chromium
<b>TK8846</b>	57mm Ø x 0.5mm Tungsten
<b>TK8862</b>	57mm Ø x 1.5mm Chromium
<b>TK8867</b>	57mm Ø x 0.2mm Tungsten
<b>TK8869</b>	54mm Ø x 1.5mm Carbon
<b>TK8875</b>	57mm Ø x 0.1mm Aluminium*
<b>TK8878</b>	57mm Ø x 0.1mm Platinum/Palladium (80/20)*
<b>TK8879</b>	57mm Ø x 1.5mm Titanium
<b>TK8887</b>	57mm Ø x 0.3mm Platinum/Palladium (80/20)
<b>TK8889</b>	57mm Ø x 0.3mm Gold
<b>TK8891</b>	57mm Ø x 0.3mm Gold/Palladium (80/20)
<b>TK8893</b>	57mm Ø x 0.3mm Platinum
<b>TK8895</b>	57mm Ø x 0.5mm Titanium
<b>TK8897</b>	57mm Ø x 0.1mm Iron*
<b>TK8899</b>	57mm Ø x 0.3mm Iridium
<b>TK8900</b>	57mm Ø x 0.1mm Cobalt
<b>TK8902</b>	57mm Ø x 0.1mm Tin*
<b>TK8903</b>	57mm Ø x 0.1mm Molybdenum*
<b>TK8905</b>	57mm Ø x 0.3mm Magnesium
<b>TK8906</b>	57mm Ø x 0.1mm Tantalum*
<b>TK8907</b>	57mm Ø x 3mm Indium Tin Oxide (90/10)

\* To avoid a short target life it is not advisable to use targets of less than 0.3 mm for coatings of 50nm or thicker in conjunction with high sputter currents. Please consider using a bonded or thicker target

<b>Carbon Supplies</b>	
<b>A0830A</b>	Carbon rods – 6.15mm Ø x 100mm length (unshaped) pack of 10
<b>A0832A</b>	Carbon rods – 6.15mm Ø x 50mm length (shaped) pack of 10
<b>C5422</b>	Carbon rods – 3.05mm Ø x 300mm length (unshaped) pack of 10
<b>A0819</b>	Carbon fibre cord – high purity – 1m
<b>A0819-5</b>	Carbon fibre cord – high purity – 5m
<b>C5421</b>	Carbon fibre cord – standard grade – 1m
<b>C5421-10</b>	Carbon fibre cord – standard grade – 10m
<b>C5421-100</b>	Carbon fibre cord – standard grade – 100m
<b>S8650</b>	Manual rod shaper for 6.15mm Ø carbon rods
<b>S8651</b>	Manual rod shaper for 3.05mm Ø carbon rods
<b>Other Consumables and Spare Kits</b>	
<b>A0754</b>	Metal evaporation basket – pack of 10 (for use with 10457 metal evaporation head)
<b>10449</b>	Two-year spares kit for Q150GB Includes: TK8845 chromium target, C5421 carbon fibre cord, C5461 carbon fibre - fine, C5422 carbon rods 3.05mm, spare glass cylinder assembly, C5460 quartz crystals, O-rings, springs

## Q150GB Specification

<b>Vacuum Module Size:</b>	267mm W x 490mm D x 494mm H (total height with coating head open: 767mm)
<b>Power Supply Size:</b>	310mm W x 357mm D x 262mm H
<b>User Interface Size:</b>	160mm W x 157mm D x 42mm H
<b>Total Weight:</b>	40kg
<b>Packed Dimensions:</b>	725mm W x 660mm D x 787mm H (44kg)
<b>Work Chamber:</b>	Borosilicate glass 152mm Ø (inside) x 214mm H
<b>Safety Shield:</b>	Integral polyethylene terephthalate (PET) cylinder
<b>Display:</b>	145mm 320 x 240 colour graphic TFT (Thin Film Transistor) display
<b>User Interface:</b>	Intuitive full graphical interface with touch screen buttons, includes features such as a log of the last 100 coatings carried out and reminders for when maintenance is due
<b>Sputtering Target:</b>	Disc style 57mm Ø x 0.3mm thick chromium target is fitted as standard
<b>Specimen Stage:</b>	50mm Ø rotating stage. Rotation speed 8-20 rpm

For full specifications, please see our website

Distributed by:



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