

Maynards

SINCE 1902

AUCTIONS | LIQUIDATIONS | APPRAISALS

BY ORDER OF SCHUCO TF GMBH & Co. KG and Malibu GmbH & Co. KG

ONLINE AUCTION

SOLAR THIN FILM PANEL PRODUCTION EQUIPMENT
EX SITE GERMANY

SCHÜCO



ONLINE AUCTION

21 MARCH 2013

CLOSING FROM 11am CET

In conjunction with:

Hilco Industrial

Auctioneers • Liquidators • Appraisers



Heritage Global Partners

Asset Advisory and Auction Services
A Legacy since 1937

60 MW (A-SI/ μ C-SI) THIN FILM SOLAR MODULE
PRODUCTION LINE (GEN8.5 - 2600X2200MM)

OVER 500 LOTS:

- GLASS HANDLING EQUIPMENT
- ROBOTS
- VACUUM PUMPS
- LASERS
- DEPOSITION & SPUTTERING TOOLS
- ... AND MORE!

www.maynards.com

CANADA | USA | EUROPE | JAPAN | CHINA

AUCTION TIME AND DATE

**Thursday, 21
March 2013**
starts to close from 11am CET

PREVIEW DATE

By appointment only
Please contact Maik Wehner
at +49 (0)172 7908991 or email
Schueco@maynards.com

LOCATION

Bielefelder Str. 1, 39171
Osterweddingen, Germany
Schücostr. 8, 01900
Großröhrsdorf, Germany

CONTACT:

Daniel Kröger

Phone: +49 (0) 174 3210 115
Email: danielk@maynards.com

Daniel Gray

Phone: +44 (0) 8453 130 185
Email: dgray@hilcoeuropa.com

David Barkoff

Phone: +1 650 649 0147
Email: dbarkoff@hgpauctions.com

FURTHER INFORMATION: A 15% buyer's premium will be charged on all assets • Auction will be conducted in English, accepting Euro only • All items are offered for sale by online auction unless previously sold by private treaty • Removal: 8 April - 31 May 2013

BACKGROUND INFORMATION

- Due to discontinuation of all thin-film photovoltaic production activities
- Company activities include research & development as well as production of thin-film photovoltaic modules
 - Technology is based on thin-film silicon tandem junction
- Modules are based on a frameless glass-glass laminate with an efficiency of up to 10%
 - Possibility to produce different module sizes to address various market segments

GENERAL LAYOUT AND PROCESS FLOW OF 60 MW THIN FILM SOLAR MODULE PRODUCTION LINE

- | | | |
|--|-------------------------------------|--------------------------------|
| 1. Glass Cleaning | 6. Vapour Deposition Back Contact | 11. Attachment Junction Box |
| 2. Laser Scribe P1 (TCO) | 7. Laser Scribe P3 (Back Contact) | 12. Final Inspection – Flasher |
| 3. Glass Cleaning | 8. Application Side & Cross Contact | 13. Application Back Bars |
| 4. Vapour Deposition of a-Si/ μ c-Si | 9. Application PVB and Back Glass | |
| 5. Laser Scribe P2 (Silicon) | 10. Encapsulation/ Autoclave | |





(GLASS) HANDLING EQUIPMENT / KUKA ROBOTS

- **GLASS LOADER/ UNLOADER**, Kuka Robot KR 180-2K 2000, (6-axis) new 2008
- **GLASS LOADER/ UNLOADER**, Kuka Robot KR 210-2K 2000, (6-axis) new 2008

CONVEYORS, CRANES & HANDLING RACKS

- **CONVEYOR SYSTEM**, Grenzebach, for Glass transport with MHS control station, new 2009
- **OVERHEAD CRANE**, Demag, with Support Beams, 500 kg lifting capacity, new 2008
- **OVERHEAD CRANE**, Demag with Support Beams, 250 kg lifting capacity and Bystonic Glass Vacuum Handling Assembly, new 2008
- **OVERHEAD CRANE**, 1000 kg lifting capacity, new 2008
- **VARIOUS L-RACKS GLASS CARRIERS**, new 2008
- **VARIOUS A-RACKS GLASS CARRIERS**, new 2008

LOADERS

- **LOADING SYSTEM**, Grenzebach, Glass Loading system (Y-Z Axis) with SEW eurodrive gear box. Max. load 75kg, new 2008

MANIPULATORS

- **MANIPULATOR**, Armatec, new 2008

(GLASS) DEPOSITION EQUIPMENT



(GLASS) DEPOSITION EQUIPMENT

- **CVD AKT 60KO SOLAR**, AKT 60KO PECVD System for a-Si and μ -Si. Triple Slot Load Lock, Main Chamber with transfer robot, 7 Process Chambers (1 Boron doped, 6 Phosphin doped)
- **PVD SPUTTERING TOOLS: AMAT ATON 5.7 BC**, Horizontal Magnetron Sputtering System for substrate width max 2,6m
- **AUTOCCLAVE**, Scholz



(GLASS) PROCESSING / MACHINING SEAMER

- **AUTOSEAMER**, Benteler, Edge seaming tool with two grinding wheels (K-Shape) on each side glass dimension (L x W), max. 2600 x 2600mm
- **SEAMING TOOL**, Benteler, Two Direction grinding Tool (c-shape of edge and optional edge deletion)

LAMINATORS

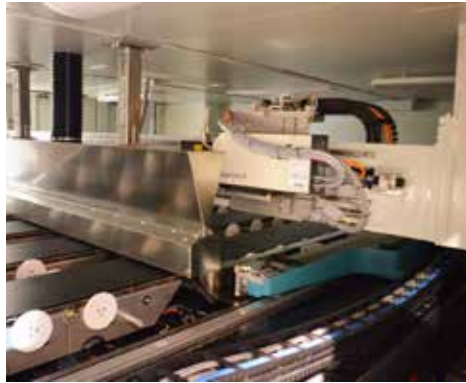
- **LAMINATION TOOL**, Kloepper, NIP Roller Lamination Tool

WASHERS

- **WASHER**, Benteler, Wet Cleaner, Various types of Washing machines with various stations, for glass size max.2200 mm width



LASERS • CUTTERS

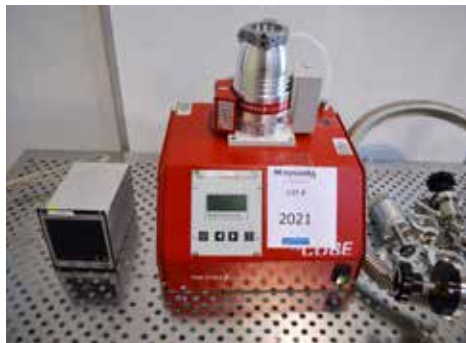


LASERS

- **60K LASER SCRIBE SYSTEM**, AMAT, substrate climbing 200mm width, max. 2600mm length, Roфин laser source (1064nm / 532nm) with beam split & galvo optics
- **LASER SCRIBE 5.7 SYSTEM**, MANZ, substrate climbing 2200mm width, max. 2600mm length, Roфин laser source (1064nm / 532nm with beam split)
- **LED LASER SYSTEM**, Manz Automation with Trumpf Laser TruMicro 7050 LED Laser

CUTTERS

- **CUTTING TOOL FOR LAMINATION FOIL**, Grenzebach, PVB cutting and preparation tool
- **CUT AND BREAK TOOL**, Grenzebach, automatic



VACUUM TECHNOLOGY PUMPS

- DRY PUMP, BOC Edwards iF400 / iF 30K / iXH450H / IXH 500 / IH 1800
- PROXIMITY BOOSTER PUMP, BOC Edwards, phMB 2400
- VACUUM PUMP, Busch Mink MM 1144 BV
- TURBO PUMPING STATION, Pfeiffer High Cube 80 Eco

GENERATORS

- RF GENERATOR, Daihen RGA-150A1 / RGA-400A 7 / RGA-300C2, Variable Frequenz RF-Generator
- DC GENERATOR, Huettinger MP 60
- GENERATOR, for Berger Pulsed Solar Simulator

ABATEMENT SYSTEM

- GAS ABATEMENT SYSTEM, Metron Ecosys, Marathon S / 8500

MISCELLANEOUS EQUIPMENT



MISCELLANEOUS EQUIPMENT

- **AUTOMATIC STORAGE SYSTEM**, Grenzebach, Buffer / Storage Unit with Automatic Retrieval and Handling System, X-Y-Z Axis
- **SUN SIMULATOR**, Hartmann, Light Soaking Bench
- **LASER SOURCES**, Rofin
- **MOTORS**
- **SPARE PARTS**

SALE CONDUCTED BY:

Maynards

SINCE 1902

AUCTIONS | LIQUIDATIONS | APPRAISALS

www.maynards.com

Maynards Europe GmbH | Maximilianstr. 4B | 82319 Starnberg, Germany
Phone +49 8151 973420 | Fax +49 8151 973419 | schueco@maynards.com

IN CONJUNCTION WITH:



3 St Helen's Place | London, EC3A 6AB | United Kingdom
www.hilcoind.com



Heritage Global Partners

Asset Advisory and Auction Services
A Legacy since 1937

Hacienda Del Mar | 12625 High Bluff Drive | San Diego, Ca. 92130
www.hgpauktion.com

CONTACT: Daniel Kröger
Phone: +49 (0) 174 3210 115
Email: danielk@maynards.com

Daniel Gray
Phone: +44 (0) 8453 130 185
Email: dgray@hilcoeuropa.com

David Barkoff
Phone: +1 650 649 0147
Email: dbarkoff@hgpauctions.com