

ONLINE AUCTION

By order of Schüco TF GmbH & Co. KG and Malibu GmbH & Co. KG we offer for sale ex site

SCHÜCO

Solar Thin Film Panel Production Equipment

60 MW (a-Si/ μ c-Si) Thin Film Solar Module Production Line
Production Equipment (Gen8.5 – 2600x2200mm)

OVER 500 LOTS

R&D Tools

Robots

Vacuum Pumps

Lasers

Deposition & Sputtering Tools

...and much more!

Wednesday 6 - Thursday 7 February • Starts to Close at 3pm CET
Großbröhrsdorf, Osterweddingen and Bielefeld, Germany



Hilco Industrial

Auctioneers • Acquisition • Appraisers

In Conjunction with:

Maynards

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FOR FURTHER INFORMATION
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HILCO INDUSTRIAL ONLINE AUCTION

By order of Schüco TF and Malibu GmbH & Co. KG

SCHÜCO

AUCTION DATE

WEDNESDAY 6 - THURSDAY 7 FEBRUARY 2013
CLOSING FROM 3PM CET EACH DAY

PREVIEW DATE

BY APPOINTMENT ONLY

PLEASE CONTACT MAIK WEHNER AT +49 (0)172 7908991 OR EMAIL MAIK.WEHNER@MAYNARDS.COM

LOCATION

BIELEFELDER STR. 1, 39171
OSTERWEDDINGEN, GERMANY
SCHÜCOSTR. 8, 01900 GROßRÖHRSDORF,
GERMANY
MALIBU R&D CENTER LOCATED IN
BÖTTCHERSTR. 7, 33609 BIELEFELD,
GERMANY

FURTHER INFORMATION

- AN 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: MONDAY 18 FEBRUARY - END OF MARCH 2013
- FOR FURTHER INFORMATION ON MACHINERY & EQUIPMENT, PLEASE CONTACT:

DANIEL GRAY AT +44 (0)8453 130 185 OR EMAIL DGRAY@HILCOEUROPE.COM

MAIK WEHNER AT +49 (0)172 790 8991 OR EMAIL MAIK.WEHNER@MAYNARDS.COM

DAVID BARKOFF AT +1 650 649 0147 OR EMAIL DBARKOFF@HGPAUCTIONS.COM

- FOR CUSTOMER SERVICE, PLEASE CONTACT SHIRLEY PHIPPS AT +44 (0)121 237 6221 OR EMAIL SPHIPPS@HILCOEUROPE.COM

BACKGROUND INFORMATION

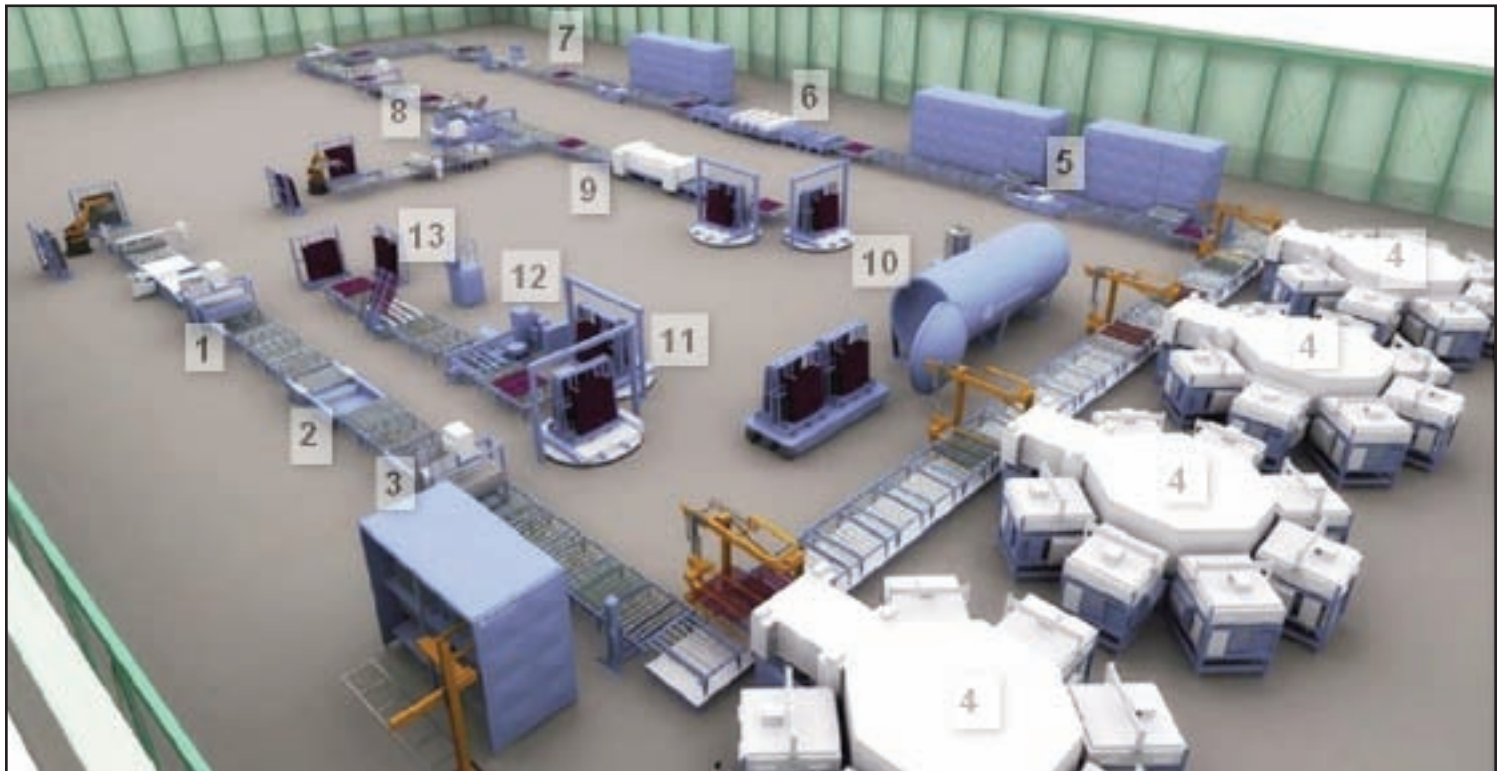
- Due to discontinuation of all thin-film photovoltaic production activities
- Company activities include research & development as well as production of thin-film photovoltaic modules
- Technology is based on thin-film silicon tandem junction
- Modules are based on a frameless glass-glass laminate with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

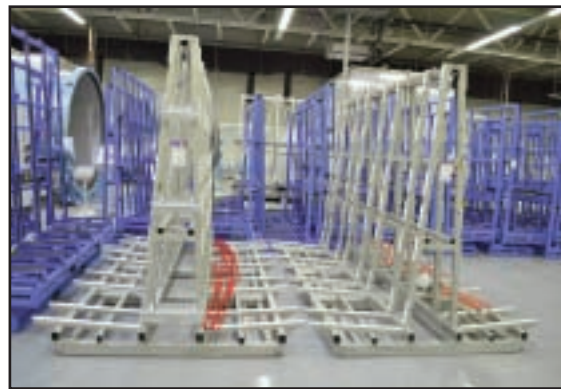
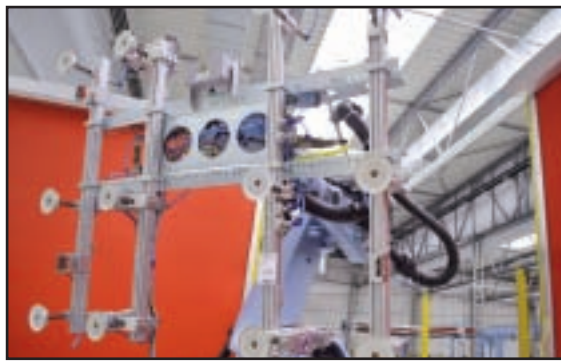
FEATURING

- 60 MW (a-Si/ μ c-Si) Thin Film Solar Module Production Line
- Production Equipment (Gen8.5 – 2600x2200mm)
- Over 500 Lots:
 - R&D Tools
 - Robots
 - Vacuum Pumps
 - Lasers
 - Deposition & Sputtering Tools
 - ... and much more!

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
- **GLASS LOADER/UNLOADER**, Kuka Robot KR 360 L280-2 (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

- **1- MANIPULATOR**, Armatec, new 2008



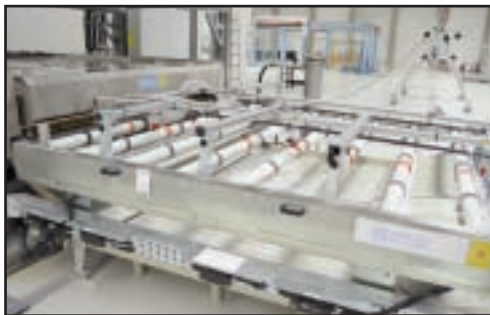
(GLASS) DEPOSITION EQUIPMENT



(GLASS) DEPOSITION EQUIPMENT

- **CVD AKT 60KO SOLAR**, AKT 60KO PECVD System for a-Si and μ c-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





(GLASS) PROCESSING /MACHINING SEAMER

- **HAND SEAMER**, Benteler, Manual Edge seaming tool, dimension (L x W), max. 2600 x 2600mm
- **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

- **60K LASER SCRIBE SYSTEM**, AMAT, substrate climbing 200mm width, max. 2600mm length, Rofin laser source (1064nm / 532nm) with beam split & galvo optics
- **LASER SCRIBE 5.7 SYSTEM**, MANZ, substrate climbing 2200mm width, max. 2600mm length, Rofin laser source (1064nm / 532nm with beam split)
- **LED LASER SYSTEM**, Manz Automation with Trumpf Laser TruMicro 7050 LED Laser
- **LED LASER SYSTEM**, Jenoptik with Powerlase laser source, new 2008



CUTTERS

- **CUTTING TOOL FOR LAMINATION FOIL**, Grenzebach, PVB cutting and preparation tool
- **CUT AND BREAK TOOL**, Grenzebach, automatic
- **CUTTING TABLE**, Hegla, FormLine KT, Manual Glass Cutter with Lift Mapping Table



VACUUM TECHNOLOGY PUMPS

- **DRY PUMP**, BOC Edwards iF400 / iF 30K / iXH450H / IXH 500 / IH 1800
- **PROXIMITY BOOSTER PUMP**, BOC Edwards, phMB 2400
- **TURBOMOLECULAR PUMP**, Adixen 1600M, 5-Axis Magnetically Levitated Turbopump, Flange (in) DN 250 ISO-F, Flange (out)
- **VACUUM PUMP**, Busch Mink MM 1144 BV, new 2008
- **VACUUM PUMP**, Oerlikon Leybold, SV630b / SV 65b

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



R&D TOOLS • MISCELLANEOUS



R&D TOOLS

- **GLASS INSPECTION TOOL**, Graphikon, Optical glass inspection tool to characterise Gen5 substrates in incident and transmitted light
- **OERLIKON SOLAR LASER LSS 1200**, SiLas 3 PH with Prisma Coherent Laser and Jenoptik disk IR 70 E Laser
- **IR CAMERA SYSTEM**, IRCam GmbH, Camera System with Lens IR M-25mm with stand
- **SUN SIMULATOR SYSTEM**, Newport Corporation, Sun Simulator with Newport Isolation Table



MISCELLANEOUS

- **AUTOMATIC STORAGE SYSTEM**, Grenzebach, Buffer / Storage Unit with Automatic Retrieval and Handling System, X-Y-Z Axis
- **SPARE PARTS** for Marathon S / 8500
- **LASER SOURCES**, Rofin
- **MOTORS**, SEW



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