

elocab

Cable Solutions for Semiconductor & Display Industries

Semiconductor Technology

BizLink



Manufacturing for Special Cleanliness Grades

- Low emission Outgassing approved
- Low particle emission Fraunhofer IPA approved
- Long lifetime BizLink test center

We Connect Your Clean Room

BizLink is your reliable partner in the development and manufacturing of tailor-made cables, and your knowledge center for sophisticated connection technology for clean room applications.

Numerous industry branches and application types increasingly require clean and largely particle-free components and systems.

BizLink delivers clean room cable for manufacturing areas and fulfills all requirements up to Air Cleanliness Class 1. Various solutions also meet all requirements which are needed in ultra high vacuum environment.

Applications 〉

- Semiconductor industry
- Display industry
- Optical industry
- Metrology
- Aerospace technology
- Micro- and nanostructure technology
- Packaging technology
- Drag chain applications
- Drag less applications

Cable Approvals 〉

- Due to our strict quality management all clean room cables can be tested as follows, depending on customer requirements ›
- IPA certified ISO 14644-1 (e.g. HPF: EBK 41627)
- High vacuum (RGA) ISO 14644-15
- UL/CSA certification
- Low outgassing test at ChemTrace

Clean Room APPROVED Vacuum

UCT ChemTrace

IPA Fraunhofer TESTED® DEVICE LEONI Elocab Ltd. EBK 41627 Rev.0 Report No. LE 1910-1150

Our experienced engineering team designs cables for varying grades of cleanliness based on our customers purity requirements.

Each application is analyzed by our engineers to better understand specific requirements. BizLink uses selected products for outstanding customization, when specific elements are required.

BizLink Stands for High Quality and High Standards 〉

In addition to elective external certifications, such as ChemTrace and Fraunhofer IPA, all elocab clean room cables are manufactured and tested according to our strict clean room specifications.

For the Semiconductor and Display market, BizLink installed a clean room footprint of over 2000 m^2 with different cleanliness grades in accordance with ISO 14644-1 class 5–9.

This independent footprint enables the prevention of cross-contamination of forbidden materials in this industry and ensures not only a climate-friendly environment for the production of clean room application cables and cable systems but also health-friendly production for our employees.

Product Range

- Flat Cable
- Miniature Cable
- Round Cable
- Hybrid Cable
- Coaxial Cable
- Single Wires
- Power Cables
- Data Cables
- Cable Assemblies & Systems
- Prototyping



Special Sheathings for Special Applications

elocab clean cables are equipped with special sheathing materials that are ideally suited for cleanliness-critical applications due to their high abrasion resistance and low particle emission.

For Critical Applications 〉

Critical applications such as semiconductor production or production that takes place in ultra high vacuum needs low-outgassing insulation materials and special cleaning steps and processes.

The absence of silicone is guaranteed by consistent avoidance and sensitive control methods. In the final control step, the outgassing behavior of the assemblies is test-ed with a very sensitive mass spectrometer in an ultra-high vacuum chamber. Even the smallest outgassing impurities are detected.



Full Service for You 〉 Custom Engineered

The intONE™ Team is Dedicated to Being Your Full Service Solution Provider for Your Next Project!

What Does This Mean 〉

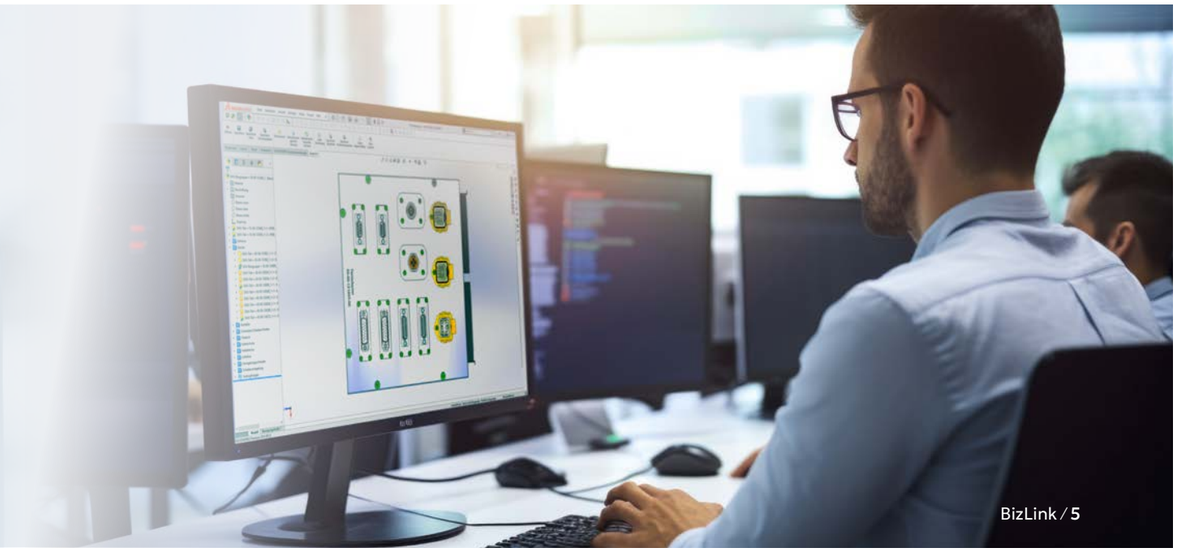
You will benefit from BizLink's extensive knowledge and experience in cable and systems engineering. We will work hand-in-hand with your engineering team and combine our knowledge into one turnkey solution tailor-made for you.

This Means 〉

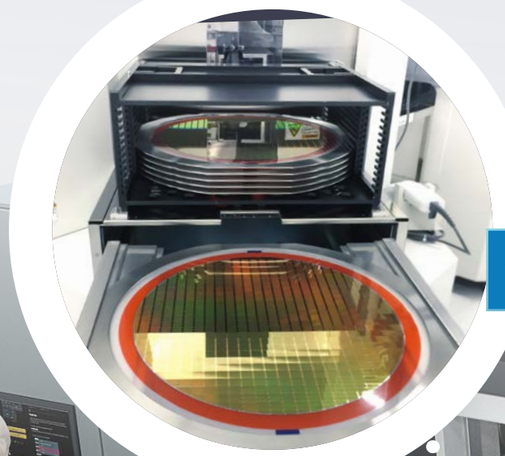
You and your engineers can focus on developing the core technology of your application – leave the rest to us. BizLink will be your partner throughout the entire lifecycle of your project to help you bring your concept to reality.

Tailor-Made Complete intONE™ Product Offering 〉 Your Cable Assembly Partner

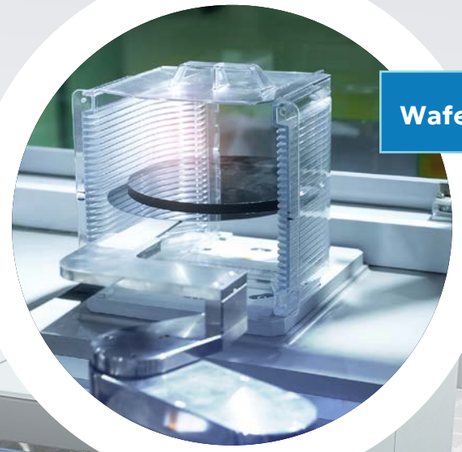
- Complete cable assembly consultation
- CAD 3D models ready to be integrated into your equipment design
- 3D mapping of the cable assembly routing within your product
- Engineered design with bill of materials and specifications
- Component identification, selection and qualification
- Full project management services
- Rapid prototyping with less than four weeks turnaround times (based on available material and design complexity)
- Increased speed to market
- Intelligent cable technology and digitalization of your cable assembly
- 3D modelling of molded connectors, strain reliefs, grommets, …
- Unique logistical service to assist in production volume sourcing
- Industry leading bulk cable minimum order of 300 ft / 100 m



World of Semiconductor Applications



Wafer Lift



Wafer Handling Robots



Picture courtesy of ETEL S.A.

Wafer Stage



Machinery Cabling
in clean room & vacuum environment



Infrastructure Cabling

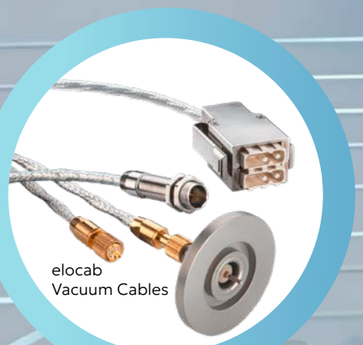
Picture: BizLink elocab GmbH

elocab Round Cable

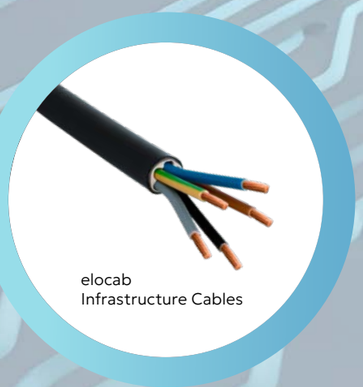
for Fixed or Flexible Applications, BizLink's Reliable and Rugged elocab Products are Adapted to Your Requirements.



elocab Clean Room Round Cables



elocab Vacuum Cables



elocab Infrastructure Cables

The cables are manufactured, clean room packaged and assembled in an extremely clean factory under strict clean room conditions. All clean room cables are subjected to several cleaning steps and strict controls right up to shipment. Contamination with forbidden materials is eliminated during manufacturing.

elocab Clean Room Round Cables for Flexible Use 〉

- **Optimized for comfortable installation**
- **Special low outgassing jacket material with improved mechanical strength**
- **Cables bundles up to 60 meters for easy cleanroom installation**
- **Lowest industry standard outgassing**
- **Optimized dimensions**
- **EMI robust**

elocab Vacuum Cables 〉

- **Emission-free materials**
- **Usable for low-particle production**
- **Exceptionally high degree of cleanliness in production**
- **Usable in ultra high vacuum environment**
- **Minimize of magnetic field disturbances**

elocab Infrastructure Cables 〉

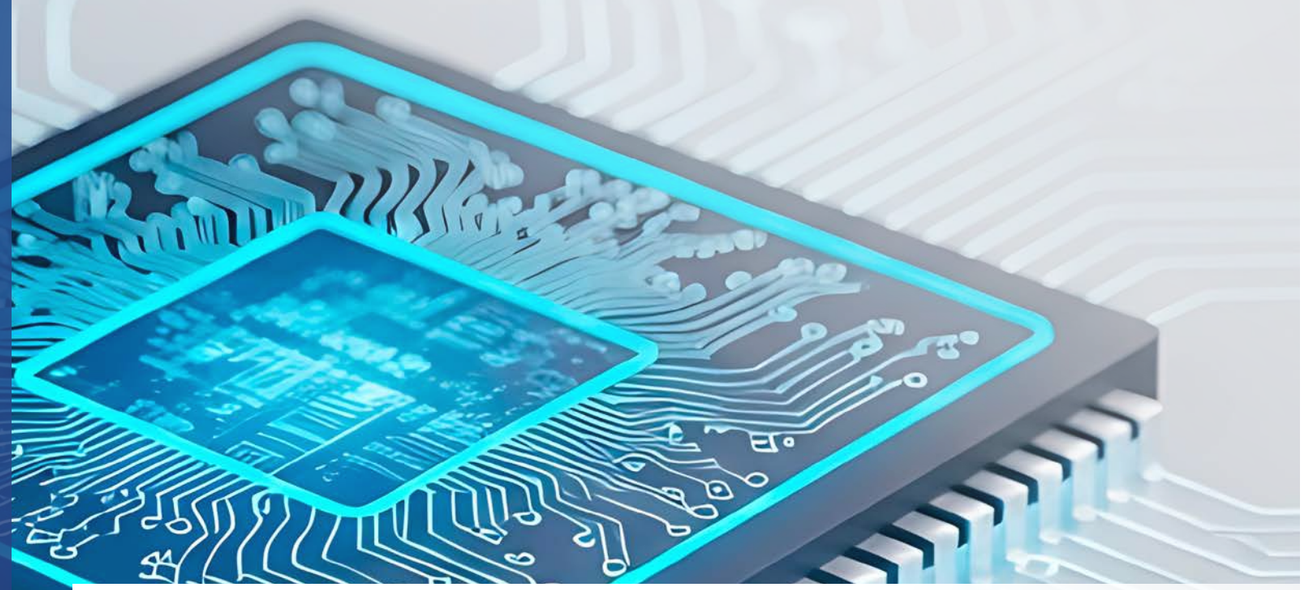
- **Multi power cable: 0.5–240 mm²**
- **Multi signal cable**
- **Data cable Cat 5e – Cat 7**
- **Lowest outgassing for Air Cleanliness Class 1 (tested at CHEMTRACE laboratory)**
- **Optimized cable diameters**

elocab Flat Cable



BizLink's High Performance Flex and Flexible Sleeve Technology Replaces a Traditional Track System, with up to 1500 mm of Supported Free Travel.

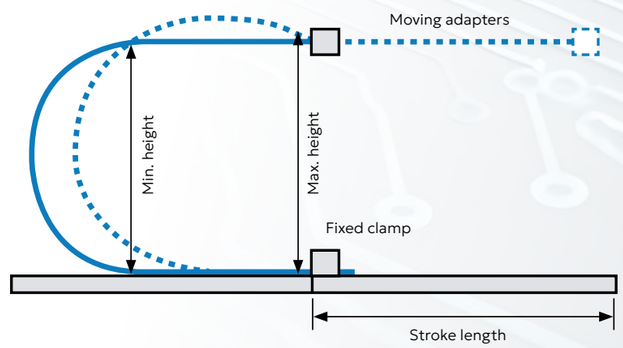




With a proven flex life greater than 10 million flex cycles and approved material for ISO Class 1 clean room. These cables are the reliable choice to decrease downtime.

- Tight bend radii from 25 to 150 mm (7.5 times the cable's height).
- Trackless solutions up to 1500 mm
- Proprietary clock spring design (reducing cable stress when rotating in the arm joint)
- Outer jacket made of low friction PTFE-tape
- High speed data and signal transmission
- Space saving design
- Engineering feedback resulting in design optimization of moved machine parts
- Tailor-made solutions including custom designed brackets and clamps for fixture in application

Rolling Flex Diagram



elocab High Performance Flex Cables & Cable Solutions

Maximum Reliability and Flexible Use up to 150 Million Cycles





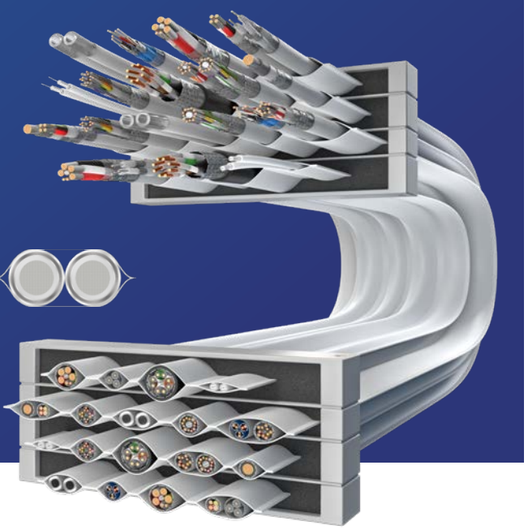
Product Specification – elocab High Performance Flex Technology

Superior flexibility	Up to 150 million cycles at tight bending radii (7.5 times the cable height)
Unlimited options	BizLink can design any component that you require
Superior performance	Optimized system performance with custom HPF cable assemblies
Laminated designs	Custom made for high end systems requiring higher accelerations and application speeds
Custom components	Special conductor materials, optimized layout and unique insulation materials
Hybrid Designs	Include custom coaxial signal wires, power and control wires, optical fibers, tubes and other components
Low weight	Permits high positioning speeds and accuracy
Complete cable assemblies	Including mechanical and electrical components
Prototype orders	300 ft / 100 m for new custom designs
Web spacing	Can be defined in order to optimize overall cable width – zero web up to 2.5 mm webs possible
Typical copper used	Bare, silver plated copper in high strand counts as well as high strength copper alloys
Acceleration	Up to 45 m/s²
Speed of travel	> 3 m/s
Cable width	15–150 mm
Typical # of cables stacked	Up to 5 cables in one clamp – depending on design more cables can be stacked
Clean room class	IPA Air Cleanliness Class 1 (highest class possible)
Temperature range for optimal flex life	20 °C – 80 °C / 68 °F – 176 °F
Certifications	UL & CE
Self supporting design option	Up to 75 cm / 30 inches (depending on cable design)

elocab Flexible Sleeve Technology & Cable

Reliability and Flexible Use up to 10 Million Cycles



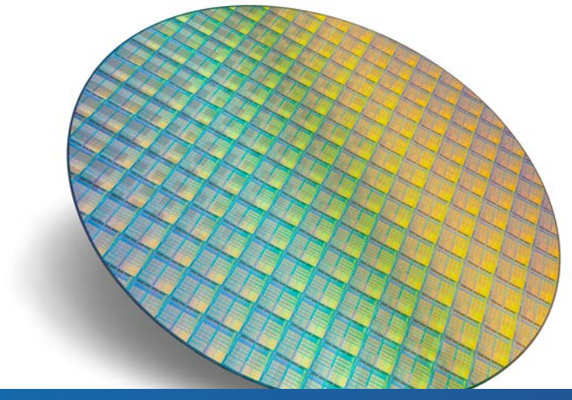


Product Specification – elocab Flexible Sleeve Technology

Superior flexibility	10 million cycles and beyond
Typical bending radius	Typical bending radius approximately 75 mm if only standard components are used
Unlimited options	Set of readily available standard components
Web spacing	Standard web spacing of 1 mm – 2 mm
Typical copper used	Bare and silver plated copper, Class 5 stranding or better
Acceleration	Up to 30 m/s²
Speed of travel	Up to 3 m/s
Cable width	22–127 mm
Typical # of cables stacked	Ranging from 2–10
Clean room class	IPA Air Cleanliness Class 1 (highest class possible), ISO 14644-1
Temperature range for optimal flex life	20 °C – 80 °C / 68 °F – 176 °F
Certifications	UL & CE
Self-supporting design option	Strength members that allow for 150 cm / 59 inches of supported free travel

elocab Clean Room Product Range

We listen closely to our customers to ensure we deliver cables and systems meeting and exceeding their expectations. Bulk cable, assemblies and ready solutions packed for usage in a clean room are typical clean room solutions.



CL-Fix

CleanLine-Fix
Customized round cable for clean room infrastructure, built with approved clean room compounds and developed for low outgassing.

CL-Flex

CleanLine-Flex
Customized round cable for power supply, data transmission and air/fluid handling. Special clean room compounds are optimized for low abrasion in high-speed applications.

HPF/FST

High Performance Flex & Flexible Sleeve Technology
Customized PTFE flat cable (HPF) and modular system (FST) enable tight bend radii, maximum reliability and flexible use up to 150 million cycles.

HPF-V

High Performance Flex Vacuum
Customized PTFE flat cable for vacuum applications with unique low outgassing properties.

CL-V

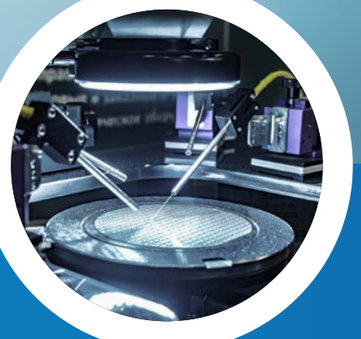
CleanLine-Vacuum
Customized round cable for ultra-high vacuum applications. The CleanLine-Vacuum cable fulfills all requirements for the lowest industry standard outgassing which is required for ISO 14644-15.



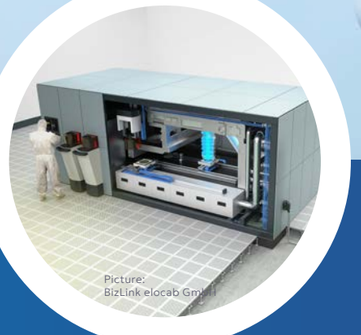
Applications 〉		CL-Fix CleanLine-Fix	CL-Flex CleanLine-Flex	HPF/FST High Performance Flex & Flexible Sleeve Technology	HPF-V High Performance Flex Vacuum	CL-V CleanLine-Vacuum
Back End	Die Attachment		✓	✓		
	IC Bonding Wire bonding, Thermosonic bonding, Flip chip, Wafer Bonding, Automated Tape Bonding		✓	✓		
	IC Encapsulation Baking, Plating, Laser marking, Trimming and Forming		✓	✓		
Front End	**Cleaning** Solvent Cleaning, Piranha Solution, RCA clean		✓	✓	✓	✓
	Lithography		✓	✓	✓	✓
	Ion Implantation		✓	✓	✓	✓
	Etching		✓	✓	✓	✓
	Deposition		✓	✓	✓	✓
	Planarization		✓	✓	✓	✓
	Wafer Testing		✓	✓	✓	✓
Surface Mounted Technology	Line Loader		✓	✓		
	Identification / Marking		✓	✓		
	Screen Printing		✓	✓		
	Coating		✓	✓		
	In Circuit Test		✓	✓		
	Line Unloader		✓	✓		
Special Applications	Display Manufacturing		✓	✓	✓	✓
	Solar Panel		✓	✓		
	Clean Room Infrastructure	✓	✓	✓		
	Wafer Lift		✓	✓		
	Wafer Handling Robots		✓	✓	✓	✓
	Waferstage		✓	✓	✓	✓
	Sensors		✓	✓	✓	✓

Semiconductor Front End Production

Overview





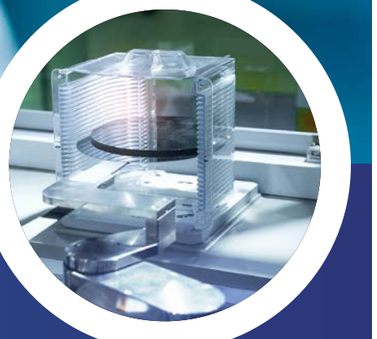


Picture:
BizLink elocab GmbH





Picture courtesy of ETEL S.A.



Testing (High Voltage)

BizLink offers cables and cable assemblies for test applications in clean rooms. Pioneers in semiconductor wafer inspection equipment already trust in our solutions. Our 20 kV high voltage cables with outer jacket made of low friction PTFE-tape have great performance during test procedures for Wafers. These systems test the connections of the Wafer by high voltage impulses.

Electron-Beam Lithography

Silicon direct write, compound semiconductor and Mask making are manufacturing processes with high technical and cleanliness requirements.

Our customer is the leader in designing and manufacturing of electron-beam lithography. They fulfill all these requirements with elocab clean room cables.

The customized design of elcoab cables always are the specific solution which the customer needs.

Measuring Systems

BizLink's customer is a world market leader in multidimensional measuring technology and manufactures measuring systems for adjusting mirrors in lithographs. Therefore, BizLink delivers power, control and data cable assemblies.

The clean room round cables are optimized for comfortable installation and are equipped with special low outgassing jacket materials with improved mechanical strength. BizLink engineers customized cable bundles are good for up to 60 meters making it easy for clean room installation.

Etching Equipment

Leading SMT machinery manufacturer and partner to the worlds leading semiconductor companies trust in elocab clean room cables. Typical applications are front-end etching equipment. The laminated High Performance Flex Cables enable faster, more complex and precise etching equipment with a smaller footprint.

Cable for Wafer Platform

elocab's High Performance Flat Cables fulfill requirements in challenging environments such as highly sensitive and precise movements. These often occur in semiconductor and display frontend and backend installations and planar platforms.

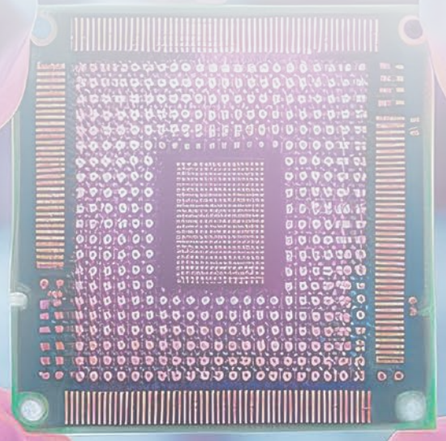
High Performance Flat Cables are the ideal solution for step-and-scan-applications, wafer process control, structuring of wafers and laser-based heat treatment of wafers. Some leading suppliers for high precision and high dynamic motion technology now use this and trust in elocab solutions.

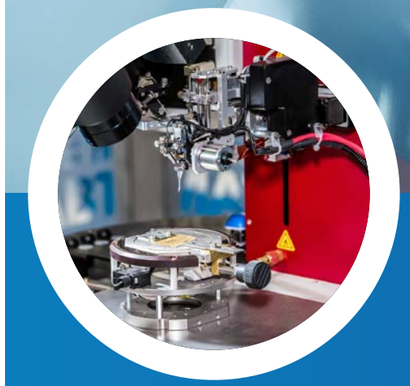
Wafer Handling Robots

World leader in vacuum robotics, electric motor technology and leading manufacturers of wafer handling equipment use elocab cables and cable assemblies for the full spectrum of wafer handling robotics. There are solutions for robotics for thin or bonded wafers and specialized wafer carriers. Robots for various uses around arc welding (including spot welding), handling, assembly, painting, transfer of liquid crystal panels, and transfer of semiconductor wafers are equipped with elocab clean room cables. Especially the laminated High Performance Flex Cables perfectly fit for these kind of applications.

Semiconductor Back End Production

Overview





Die Attach

BizLink offers cables and cable assemblies for bonding systems. Bonding is a key technology for manufacturing semiconductors. BizLink equips this machinery with highly flexible clean room cables. Best properties for speed, acceleration with lowest environment contaminations plus best EMV conditions BizLink combines with long flex life for less maintenance issues. Our customers are leading suppliers of semiconductor assembly equipment for the global semiconductor and electronics industries. We meet all requirements for flip chip bonding, wire bonding, die bonding, soft solder die bonding, multi module attach and laser bonding.



High Speed Camera

For high-speed cameras BizLink develops customized cables like a special GHz coax cable. This special GHz coax is an innovation to ensure important image transmission for position accuracy. The reliability was tested with more than 100 million flex cycles and had to pass harsh electromagnetic tests. A leading supplier of semiconductor assembly and packaging equipment for the global semiconductor and electronics industries uses this cables for high speed cameras for tracking and inspection imaging.



Pick & Place

For dispensing and pick and place production machines our drag less PTFE cable solution transport beside the important power and data as well bonding or molding substrate to the dies and PCBs. Our Air Cleanliness Class 1
approved solutions are perfect for the growing cleanliness standard of semiconductor and display production. Leading suppliers of high flexible SMT pick and place solutions with sophisticated dispenser systems trust in elocab tailor-made High Performance Flex Cables.

Further Clean Room Applications

Overview



Surface Mounting

BizLink offers cables and cable assemblies for surface mounting machinery. These applications have special requirements for installed cables. BizLink perfectly meets the requirements regarding flexibility, lifetime and cleanliness.



Display Applications

The manufacturing processes of displays and wafers have very similar requirements to the semiconductor industry. This is the reason why elocab clean room cables perfectly fulfill the needs for both of these industries. Leading providers of process innovation technologies of photovoltaics, electronics and lithium-ion battery technology know this and use especially elocab High Performance Flex Cables. Optical inspection equipment for large flat panel displays, test cell and inspection equipment and production equipment e.g. laser glass cutting are just some examples in these market fields.



Infrastructure Cabling

Infrastructure cabling of power, signal and data interconnection is an important topic for semiconductor manufacturer. BizLink offers clean room cables for infrastructure cabling which have lowest
outgassing for Air Cleanliness Class 1. Multi power cable from diameters of 0.5 mm^2 up to 240 mm^2, multi signal cable and data cable Cat. 5e – Cat. 7 are provided.

50+
Locations

1996
Founded

20K+
Employees

20
Countries

Where Possibilities Connect™

Driven by Our Unwavering Commitment, We Achieve Connections to Bring World-Changing Visions to Life.

As a leader in the art of interconnectivity, we use our expertise to offer our customers the resources and technology they need, to realize their vision, so that they can connect with their customers on a deeper level.

BizLink's journey began in 1996 in a modest Silicon Valley office, built on one bold idea: **create connections that move the world forward**.

From those early days, we've grown into a global team of 20,000+ colleagues across 20 countries, all driven by the same spirit of possibility. From our first power-cord sets to today's full range of wire harnesses, connectors, and custom cable assemblies, we continue to push the boundaries of interconnect technology.

With agile manufacturing and collaborative R&D hubs across North America, Europe, and Asia, we combine global scale with local responsiveness – so wherever your market is, a trusted BizLink solution is close at hand, **ready to power what's next**.

Find out more about the BizLink Group ›
www.bizlinktech.com/company-overview



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