Innovations for a better world.

Ophthalmic optics.
- Anti-reflection (AR) coatings
- Fashion mirror coatings
- Photochromic coatings
- Hard coatings
- Rx & stock lens coatings
- Sun glass coatings
- Sports glass coatings
Ophthalmic optics solutions by Bühler.

Latest anti-reflection technology and beyond.

As one of the world leaders in thin-film technology, we develop and manufacture vacuum deposition equipment for a broad range of applications. The foundation for our firm’s present-day success was laid by inventors Ernst Leybold and Wilhelm Carl Heraeus 160 years ago. Today, Bühler Leybold Optics is a globally active high-tech company, with the business area’s headquarters in Alzenau (Germany) and subsidiaries in Cary (USA) and Beijing (China). Worldwide, we employ over 300 employees. Since 2012, Leybold Optics has been part of the Bühler Group. Headquartered in Switzerland, Bühler is one of the world’s leading suppliers of industrial equipment with a presence in over 140 countries. A top priority for us is innovation leadership.
For decades, we have been at the forefront of ophthalmic coating technology development. Today, we offer the most comprehensive and competitive portfolio of anti-reflection batch coating systems on the market. We shaped the ophthalmic industry with a series of breakthrough innovations, starting with the first anti-reflective eyeglass coatings in the 1950s.

Since then, numerous milestones have been achieved:

1960's  Introduction of bell-jar systems, enabling the first industrial ophthalmic optics applications

1970's  First successful anti-reflective and scratch-protection coatings on CR-39 lenses

1980's  Introduction of plasma-assisted deposition processes

2000's  Turnkey laboratory solutions with MINI LAB and EASY LAB

2003  Antistatic- and superhydrophobic coatings

2009  Latest-generation proprietary ion-source LION

Since  Bühler Leybold Optics displays by far the most ample systems portfolio and process library in the ophthalmic optics industry

2014  Introduction of BOXER 900, dedicated to mid- to high-volume production

2015  First drum-coater type LEYBOLD OPTICS MIR

2016  Introduction of LEYBOLD OPTICS ECS

2018  Photochromic coating with UMBRA 60 system
As Bühler Leybold Optics we center our efforts on ensuring customers’ success!

With over 160 years’ experience, Bühler Leybold Optics is a leading supplier of vacuum thin-film coating technology. Our state-of-the-art solutions include: precision; ophthalmic and automotive optics applications, architectural and automotive glass for a wide range of energy saving applications, and roll-to-roll plastic film coatings for packaging, electronic and safety applications. All of our solutions are tailored for our customers’ specific market demands.

We are continuously improving our core-component technology and know-how to offer 1st class coating solutions, process expertise and customer services. Presently digitalization of our products offering best solutions, as well as digitization our company to continue offering the best solutions and serving our customers most efficiently.

From anti-reflection coatings to complex interference filters, we support in the development of new products with optics technology. Every year we invest a significant amount on research and development to improve further our technology concerning quality, precision, sustainability, serviceability and the ecological footprint of our processes and machines. We like to welcome you in our state-of-the-art Application Center where you can test samples and processes to find the most suitable solution for your needs together with our experts.

We strive to maintain our benchmark position and to be an innovative and reliable partner for our customers.

I am looking forward to work together with you!

Sincerely yours,

Antonio Requena
Managing director
Bühler Alzenau GmbH
Business Area Leybold Optics
LEYBOLD OPTICS ECS 1350
This coater is extremely focused on low-cost mass production. In this segment, its throughput per CAPEX ratio is the industry benchmark for stock lens production, but also suitable for Rx manufacturing.

Productivity 550–890 pairs / 8h  Page 16

LEYBOLD OPTICS CCS series
The LEYBOLD OPTICS CCS series is a unique concept, especially optimized for the needs of small to medium Rx laboratories. Its modular philosophy allows to start with a low initial investment. As business demand grows, a wide range of upgrades are available to match.

Productivity 50–200 pairs / 8h  Page 10

SYRUS 1100
Known in the market as the undisputed workhorse for high-volume 24/7 production, this machine is setting benchmarks due to its highly productive, reliable and cost-efficient setup, thus making SYRUS the ideal choice whenever large batches are feasible.

Productivity 360–600 pairs / 8h  Page 14

BOXER 900
The BOXER 900 is a highly flexible, mid-size to high-volume platform for Rx and stock lens production. It excels with intelligent, robust design and a compact footprint.

Productivity 270–460 pairs / 8h  Page 12
LEYBOLD OPTICS MIR 1200
The drum coating system LEYBOLD OPTICS MIR 1200 is designed for production of curved lenses as well as the combination of gradient coating and full lens area coating.

LEYBOLD OPTICS HCS series
The cleaning and dip-coating series LEYBOLD OPTICS HCS is available in three different sizes. Every single one delivers a perfect hard coating performance which is second to none.

Productivity 80–800 pairs / 8h

UMBRA 60
The all-in-one solution for having cleaning, hard coating and photochromic coating in one system which enables fastest fadeback of any commercially available lens.

Productivity 200–240 pairs / 8h

Ophthalmic optics lab
Bühler Leybold Optics offers complete turnkey, tailored solutions for building up complete ophthalmic optics labs. Based on our broad machine portfolio and own process know-how, we are the partner of choice when entering the ophthalmic optics market.
Leybold Optics – advanced coating technology.

More efficiency, reliability and flexibility.
LEYBOLD OPTICS CCS series. (50 – 200 pairs / 8 h)
The unique modular coating platform.

Besides excellent AR processes, the LEYBOLD OPTICS CCS’ unique modular concept enables you to start with a moderate initial investment, but without compromising on quality. With our carefully designed upgrade packages, the machine can grow along with your business – turning the system into a powerful and versatile tool for a mid-size laboratory.
**Technical data**

<table>
<thead>
<tr>
<th>Substrate holder</th>
<th>LEYBOLD OPTICS CCS 610</th>
<th>LEYBOLD OPTICS CCS 610+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading capacity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ø 65 mm</td>
<td>24</td>
<td>52</td>
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<td>Process time</td>
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<tr>
<td>Both sides coated</td>
<td>50–55 min</td>
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<tr>
<td>Productivity Ø 70 mm / 8 h</td>
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<tr>
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<td>72 pairs</td>
<td>144 pairs</td>
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<table>
<thead>
<tr>
<th>Components</th>
<th>LEYBOLD OPTICS CCS 610</th>
<th>LEYBOLD OPTICS CCS 610+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electron-beam gun</td>
<td>LEYBOLD OPTICS HPE 6</td>
<td>LEYBOLD OPTICS HPE 6</td>
</tr>
<tr>
<td>Ion source</td>
<td>Mark I+</td>
<td>Mark I+</td>
</tr>
<tr>
<td>Pre-vacuum pump</td>
<td>RA 100</td>
<td>RA 100</td>
</tr>
<tr>
<td>Turbomolecular pump</td>
<td>HiPace 1500</td>
<td>HiPace 1500</td>
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<tr>
<td>Cryogenic refrigerator</td>
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<td>included</td>
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<tr>
<td>Thermal evaporator</td>
<td>-</td>
<td>optional</td>
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</table>

**LEYBOLD OPTICS CCS 610**

![Diagram of LEYBOLD OPTICS CCS 610](image)
BOXER 900. (270–460 pairs/8 h)
For versatile mid- to high-volume production.

Uncompromising performance combined with an ingenious, compact design: This is BOXER 900. Its design facilitates easy and quick handling and maintenance.

- Mid- to high-volume Rx and stock lens production
- Best access for easiest batch exchange
- Calotte segmented into 3 light-weight parts
- Quick removal of protection shields for cleaning
- Very fast pumping down to process pressure
- Economic pumping stack arrangement

Highly-flexible solution for Rx and stock lens production
From classic broadband anti-reflection coating to mirror coatings – a great number of different processes can be carried out with BOXER 900.
Technical data

<table>
<thead>
<tr>
<th>Substrate holder</th>
<th>3-segment calotte</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading capacity [pcs.]</td>
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</tr>
<tr>
<td>Ø 65 mm</td>
<td>114</td>
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<tr>
<td>Ø 70 mm</td>
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<td>Ø 80 mm</td>
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<td>Process time</td>
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<tr>
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<tr>
<td>Both sides coated</td>
<td>65 min</td>
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<tr>
<td>Productivity Ø 70 mm / 8 h</td>
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<td>Chamber diameter</td>
<td>900 mm / 35.4&quot;</td>
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<tr>
<td>Footprint</td>
<td><strong>3.3 m² / 36 sq. ft.</strong></td>
</tr>
<tr>
<td>Components</td>
<td></td>
</tr>
<tr>
<td>Electron-beam gun</td>
<td>LEYBOLD OPTICS HPE 12/10</td>
</tr>
<tr>
<td>Pre-vacuum pump</td>
<td>2 x RA-100</td>
</tr>
<tr>
<td>Turbomolecular pump</td>
<td>HiPace 2300</td>
</tr>
<tr>
<td>Ion source</td>
<td>Mark II+</td>
</tr>
<tr>
<td>Thermal evaporator</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**BOXER 900**

Dimensions:
- Chamber diameter: 900 mm / 35.4"
- Footprint: 3.3 m² / 36 sq. ft.

Components:
- Electron-beam gun
- LEYBOLD OPTICS HPE 12/10
- Pre-vacuum pump
- 2 x RA-100
- Turbomolecular pump
- HiPace 2300
- Ion source
- Mark II+
- Thermal evaporator: Optional
SYRUS 1100. (360 – 600 pairs / 8 h)

The benchmark in the eyeglass industry.

Known in the market as the undisputed workhorse for high-volume 24/7 production, this machine is setting benchmarks due to its highly productive, reliable and cost-efficient setup, thus making SYRUS the ideal choice whenever large batches are feasible.

**Key benefits:**
- Ideal for high-volume stock lens production
- Broadest variety of configurations
- In-chamber (super)hydrophobic coatings

**SYRUS 1100 – the bridging coating machine between stock and Rx lens production**

Due to the largest variety of configurations the SYRUS 1100 can be perfectly matched to customer’s individual needs. In such this coating tool is ideal for stock lens manufacturing with increasing numbers of Rx products as well for highly specialized applications.
**Technical data**

<table>
<thead>
<tr>
<th>4-segment calotte</th>
<th>SYRUS 1100</th>
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<tbody>
<tr>
<td>Loading capacity [pcs.]</td>
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<tr>
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<tr>
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<td>Ø 75 mm</td>
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<td>Ø 80 mm</td>
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<tr>
<td>Process time</td>
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<tr>
<td>Dimensions</td>
<td>Chamber diameter 1100 mm / 43.3&quot;</td>
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<td>Components</td>
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<td></td>
<td>Pre-vacuum pump 300 m³/h</td>
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<td></td>
<td>Roots pump 1000 m³/h</td>
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<tr>
<td></td>
<td>Diffusion pump 12000 l/s</td>
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<tr>
<td></td>
<td>Ion source Mark II+</td>
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<tr>
<td></td>
<td>Cryogenic refrigerator included</td>
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</tbody>
</table>

**SYRUS 1100**

- 4010 mm / 158 "
- 2200 mm / 87 "
- Height: 2100 mm / 83 "
LEYBOLD OPTICS ECS 1350. (550–890 pairs / 8h)

High performance, cost-effective production.

The LEYBOLD OPTICS ECS 1350 is Bühler Leybold Optics’ offering for mass-production of eyeglass coatings where optimum value from investment is an undermost requirement.

Optimized equipment configuration
Network connection and remote access
Fully modular concept
Compact footprint
Bühler Leybold Optics plasma sources and evaporators
Quartz-crystal monitoring

Key benefits:
- For mid- to high-volume stock lens production
- Optimum CAPEx performance ratio
- Proprietary Bühler Leybold Optics processes available

LEYBOLD OPTICS ECS 1350 – highest throughput and unbeatable cost-per-lens
Designed for large batches, both for classical stock lens mass-production and for Rx production, this coating tool excels with unsurpassed cost-benefit ratios.
Technical data

<table>
<thead>
<tr>
<th>Loading capacity [pcs.]</th>
<th>Ø 65 mm</th>
<th>293</th>
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<tbody>
<tr>
<td>Ø 70 mm</td>
<td>252</td>
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<tr>
<td>Ø 75 mm</td>
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<tr>
<td>Ø 80 mm</td>
<td>195</td>
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</table>

Process time

- Single-sided: 28 min

Components

- Electron-beam gun: LEYBOLD OPTICS HPE 12/10
- Ion source: Mark II+
- Pre-vacuum pump: 300 m³/h
- Roots blower: 1250 m³/h
- Diffusion pump: 22000 l/s

(*) Other configurations available
LEYBOLD OPTICS MIR 1200.
Ideal for mirror coatings on curved substrates.

LEYBOLD OPTICS MIR 1200 is designed for production of curved lenses as well as the combination of gradient coating and full lens area coating. Typical coating materials are SiO$_2$ and TiO$_2$ to produce interference mirrors.

Key benefits:
- Fast loading and unloading of the complete drum
- High loading capacity
- Variety of substrates: suitable of flat and curved substrates

LEYBOLD OPTICS MIR 1200 – the drum coating solution for outstanding products
It is the perfect solution to produce sun lenses, sport glasses, ski googles, helmed visors or helmed HUD with absorbing layers in different colors, dielectric layers, mirror coatings, gradient coatings and AR coatings.
Leybold Optics – components. Assured productivity through high quality.

<table>
<thead>
<tr>
<th>Standard</th>
<th>Option</th>
<th>Pre-vacuum systems</th>
<th>High-vacuum systems</th>
<th>Vacuum measuring</th>
<th>Media supplies</th>
<th>Refrigeration systems</th>
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<tr>
<td>CCS</td>
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<tr>
<td>BOXER</td>
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<td>SYRUS</td>
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<td>MIR</td>
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<td>Thickness measuring</td>
<td>Other ion sources</td>
<td>APS ion sources</td>
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<td>Tube type</td>
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<td>Drum</td>
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<td>Process support</td>
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<th>Refrigeration</th>
<th>Media supplies</th>
<th>Vacuum measuring</th>
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<td>Polycold / Maxcool</td>
<td>Telemark</td>
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<tr>
<td>CCS</td>
<td>BOXER</td>
<td>ECS</td>
<td>MIR</td>
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</tbody>
</table>

| CCS          | BOXER    | ECS          | MIR      |              |          |              |          |              |          |
|              |          |              |          |              |          |              |          |              |          |
LEYBOLD OPTICS HCS. (80–800 pairs / 8h)

Dip-cleaning and hard coating systems.

These high-quality systems removes any kind of organic, chemical or mineral residue from the lens surface before starting the hard coating process and AR treatment application. The systems can be tailored to your volume needs and investment level.

<table>
<thead>
<tr>
<th>System</th>
<th>LEYBOLD OPTICS HCS 20</th>
<th>LEYBOLD OPTICS HCS 60</th>
<th>LEYBOLD OPTICS HCS 200</th>
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<tbody>
<tr>
<td>Dimensions</td>
<td>1720 mm</td>
<td>2800 mm incl. conveyors</td>
<td>4000–5000 mm incl. conveyors</td>
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<td>L</td>
<td>1000 mm</td>
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<td>1150 mm</td>
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<tr>
<td>D</td>
<td>2000 mm</td>
<td>2000 mm</td>
<td>2000 mm</td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Batch Size      | 1 pair                                | 3 pairs                               | 8 pairs                              |
| Process Time    | 80–100 / 8h                           | 200–280 / 8h                          | 600–800 / 8h                         |
| Throughput      | 20–25 lenses/hour                     | 50–70 lenses/hour                     | 150–200 lenses/hour                  |
| Conveyor load   | No                                    | Yes                                   | Yes                                  |
| Options         | Fully integrated inspection booth     |                                       |                                       |

Special features:
- Conveyor infeed and outfeed allow up to unattended machine operation for up to 30 minutes.
- Available with upgrade-option to photochromic.
- Suitable for any substrate due to 3 coating tanks.
  1 x primer tank, 2 x index matched hardcoating tanks
- Configurable dip processes: Single vision/Bifocal/Trifocal

Key benefits:
- Fully automatic cleaning and hardcoating
- Top quality construction – minimum downtime
- Small footprint
- Full range of chemicals and accessories
Key benefits:
- Fully integrated cleaning, hard-coating and photochromic process
- Integrated inspection booth
- Suitable for any ophthalmic substrate due to three discrete coating tanks
- Easily configurable dip processes for complex geometries
- Up to six batches queued to load/unload due to conveyor infeed and outfeed

Swappable Coating Tank Upgrade
- Different photochromic and tint colours due to multiple storage stations
- Consumable costs down for lower volume productions due to coating bath in two different sizes: one for 6 lens batches and one for 2 lens batches

Key benefits photochromic coating:
- Leading activation darkness
- Totally clear indoors
- Fastest fadeback of any commercially available lens
- 100% UV protection
- Premium abrasion and chemical resistance
- Long photochromic life

Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>D</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>2800 mm incl. conveyors</td>
<td>1000 mm</td>
<td>2000 mm</td>
</tr>
</tbody>
</table>

Batch Size
3 pairs or 6 lenses

Process Time
60 minutes

Throughput
200–240 pairs / 8h
Since 2000 Leybold Optics has installed various sizes of customized lab solutions. From entry-level up to advanced versions Leybold Optics’ lab portfolio consists of fully equipped lab solutions based on proprietary anti-reflection coating systems – but tailored to the demands of every single customer in all aspects. A brief site inspection enables us to offer the optimum lab setup for your individual business case.

<table>
<thead>
<tr>
<th>System</th>
<th>MINI LAB</th>
<th>EASY LAB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard-coating System</td>
<td>Spinning</td>
<td>Dipping</td>
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<tr>
<td>Capacity (per Shift)</td>
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<td></td>
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<tr>
<td>CCS 610:</td>
<td>From 50 to 160 pairs / 8h</td>
<td></td>
</tr>
<tr>
<td>BOXER 900:</td>
<td>From 270 to 460 pairs / 8h</td>
<td></td>
</tr>
<tr>
<td>SYRUS 1100:</td>
<td>From 360 to 600 pairs / 8h</td>
<td></td>
</tr>
</tbody>
</table>

The pictures left are showing examples. Leybold Optics engineers will develop the best matching solution that fits customer needs and ambient requirements.
Leybold Optics – lab solutions.
AR testing services and kits.

Do-it yourself
Lens test kit

Perform quality testing in-house, detailed easy-to-follow instruction manual, showing you how to carry out the tests and how to log the results. The kit comes with everything you need to get started and includes on-site training.

<table>
<thead>
<tr>
<th>Test Nr.</th>
<th>Name designation</th>
<th>International Standards or Bühler-SOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Optical Inspection</td>
<td>DIN-EN-ISO 9211-4</td>
</tr>
<tr>
<td>T2</td>
<td>Reflection – Color</td>
<td>DIN-EN-ISO 8990</td>
</tr>
<tr>
<td>T3</td>
<td>Cross hatch – Test</td>
<td>DIN-EN-ISO 9211-4</td>
</tr>
<tr>
<td>T4</td>
<td>Surface Tension</td>
<td>Bühler-SOP</td>
</tr>
<tr>
<td>T5B</td>
<td>Steel Wool Test (#2)</td>
<td>COLTS-SOP L-11-12-06</td>
</tr>
<tr>
<td>T6</td>
<td>Eraser Test</td>
<td>DIN-EN-ISO 9211-4</td>
</tr>
<tr>
<td>T8</td>
<td>Salt – Water Boiling 10 Cycles</td>
<td>DIN-EN-ISO 9211-4</td>
</tr>
<tr>
<td>T13</td>
<td>Environmental Test</td>
<td>Bühler-SOP</td>
</tr>
<tr>
<td>T15</td>
<td>QUV Test</td>
<td>Bühler-SOP</td>
</tr>
<tr>
<td>T17</td>
<td>Bayer Test (Colts)</td>
<td>COLTS-SOP L-11-12-08</td>
</tr>
<tr>
<td>T18</td>
<td>Cheese-Cloth Test</td>
<td>DIN-EN-ISO 9211-4</td>
</tr>
</tbody>
</table>

Maintain your quality inspection by checking the AR reflection color spectrally and minimize returns by checking your hard coat thickness.

Kit contains:
- F10AR/HC spectrophotometer
- Easy to use QC software
- Laptop computer preconfigured and ready-to-go
Leybold Optics processes.

**Highest quality AR coatings for any requirement.**

With the upgradeable LEYBOLD OPTICS CCS 610, the versatile BOXER 900 or the SYRUS 1100 vacuum coater included in MINI LAB or EASY LAB, your coating center will have all of the tools necessary to produce the highest quality coatings.

| Coatings               | CCS 610 | CCS 610+ | BOXER 900 | SYRUS 1100  
|------------------------|---------|----------|-----------|-------------
| AR                     | JADE PLUS | | | | 
|                        | BRILLIANT | | | | 
|                        | OPTIFLEX | | | | 
|                        | EMINENT  | | | | 
|                        | OPTIFAST | | | | 
| Hydro                  | KINGCLEAN | | | | 
|                        | SUPERCLEAN | | | | 
| Mirror and Sun Coatings| OPAL | | | | 
|                        | TOPAZ | | | |
### Anti-Reflection Coatings

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>AR Hardness</th>
<th>Coating Material</th>
<th>Standard</th>
<th>Options</th>
<th>Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brilliant</td>
<td>Flexible</td>
<td>1,1 %</td>
<td>ZrO₂-based</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optiflex</td>
<td>Low Reflection</td>
<td>&lt; 1,0 %</td>
<td>Ti₃O₅ / Dralo-based</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eminent</td>
<td>High Durability</td>
<td>&lt; 0,8 %</td>
<td>ZrO₂ / Alvirit-based</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OptiFast</td>
<td>Fast &lt; 25 minutes</td>
<td>&lt; 1,0 %</td>
<td>Dralo-based</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Color Coatings

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Color Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opal</td>
<td>Mirror Blue; Silver; Gold; Red; Customized</td>
</tr>
<tr>
<td>Topaz</td>
<td>Absorption (15–85 %) Brown; Grey</td>
</tr>
</tbody>
</table>

### Bühler Leybold Optics Processes

- Super Hydrophobic
- Anti-static
- Achromatic
- Blue AR
- Blue Blocker
- Low UV Reflection
- Absorption / Transmission Gradient
- Mirror Gradient
Bühler Leybold Optics Application Center. For your product development.

**Process Development**
- Process optimization
- Comparative studies
- R&D projects
- Customized process development

**Analysis & Quality Testing**
- From visual inspection to QUV long-term tests
- On all kind of thin-film layers (hard-, AR-, mirror-, gradient coatings)
- Detailed sample evaluation

**Quality Assurance Packages**
- Emergency tests
- Long-term testing agreements
- Training on a large variety of testing tools

**Sample Preparation**
- Hard coatings
- Anti-reflective coatings
- Mirror coatings
- Spezialized coatings

**Training & Lab solutions**
- Customized training
- Laquering and Anti-reflective process
- Facility and workflow management
Be it production of qualification samples, development of new processes for new applications, reliability testing of new components or just for training purposes, our Application Center located in Alzenau/Germany is dedicated to provide an excellent level of support and service to our customers. Our engineers and R&D experts are already curious to know how they can support our customers in their development.
Customer support and services. **CS 4.0 – from customer support/service to customer solutions.**

Bühler’s commitment to its customers:

- Ensuring right support by running your machine in the most efficient way
- Creating customers experience
- Designing customer solution
- Creating customers success

Bühler Leybold Optics’ relationship with its customer does not end when the machine is delivered, this milestone is the start and continuation of a close partnership. Wherever our customer is, there is Bühler to provide the best services to keep the machine running attending customer specifications. With a constant roll out of unique and innovative solutions, Bühler helps customers achieve success in the marketplace.
**Retrofits**
- Latest technology and efficiency standards
- Lower operating costs
- Reduced maintenance requirements

**Revision**
- Overhaul of Bühler and non-Bühler installations
- Latest production technology
- Extended lifecycle

**Spare & wear parts**
- Longer machine life cycle
- Higher operating safety
- Bühler guarantee

**Consumables**

**Consulting**
- Process optimization
- Increased productivity
- Greater energy efficiency

**Training**
- Education and professional training in training centers around the world

**Maintenance**
- Minimum downtimes
- Highest reliability and availability
- Scheduled machine service

**Smart Services**

**Smart Service Packages**
Bühler Leybold Optics has smart packages adapted to your needs.

We offer annual contingency allowance of hours, which can be selected in different packages: Bronze, silver and gold or even total care.

Need something different? We will design the ideal service contract to fit your requirements.

**Helpdesk – Follow the sun**
Always available during business hours. Contact the Helpdesk of your local service or at headquarters. Problems are analyzed immediately via remote diagnosis.

**EUROPE:**
+49 6023 500 77  
(or +41 71 955 1900)

**USA:**
+1 919 657 7100

**CHINA:**
+86 (0) 67803366-537

**IoT – CS 4.0**
Anytime and anywhere
Optimize your production by using our IoT solution.

Connecting your machine to the cloud can give you the possibility to verify machine status and adjust problems.