

SIMPLY  
SEE *of work*  
BETTER



EYE  
STRAIN?

INSPECTION MISTAKES?

REJECT?

Wir haben die richtigen Lupenlampen  
um Ihre Prüfqualität zu verbessern.

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We have the right magnifiers  
to improve your vision and the  
right tools to make you work better.



LICO

[www.eurolupe.com](http://www.eurolupe.com)

*Simply See Better!*

*& work  
better*



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*Inspect simply BETTER, see things you might not have seen before.*

**Our Customers** using LICO Magnifiers achieve individually - the best possible inspection yield resulting in the highest possible reject of insufficient parts - or end up in a simply better and faster assembling work by improved eye sight vision.

Our point of view: „To see better means to work better“

This Definition\* reflects mostly in the business success of our customers. Better inspection results mean less inadequate or faulty parts are going to the next production step or even to their customers. (\*own definition) Such reduces cost and it helps to sort out insufficient parts qualitatively better and faster to come as close as to a requested 100% inspection yield. And 100% product quality of our customers results in higher customer satisfaction of their customers which very often assures the ongoing and often additionally new business.

## Fatigue-free Inspection\*

by our ingenious combination of Lens and Light\*\* \*) (\*\*) a best possible fatigue-free use it is made available for users of LICO Magnifiers. Simply just a little reduction of light quality and or lens quality would immediately result in a reduced inspection success and it results also in considerably higher stress of eyes ( and brains, because inspection is like watching permanently HD-movies, such can be very tiring for eyes and brains).

Due to that circumstances we offer to our understanding the best possible lens on the market and the best possible light on the market provide the best possible relief to the eyes of the user. From this we derive a higher user motivation which we assume certainly results in less hours of doctor's visits and less absence due to sickness leave.

## Durability

Many users of LICO magnifiers are inspecting or repairing or manufacturing products with LICO Magnifiers 8 hours a day and 40, 80 or 120 hours a week and also many LICO magnifiers are found at transport systems, conveyors, handling and other mechanical equipment and machines.

## Excellent Magnification

Choice of 3, 4 or 5 diopters, and on BIG EYE2 with an additional 10 Diopter swing away lens

## True Long-Life Product

You receive a true long life product preserved in a sturdy re-useable packaging.

LICO BIG EYE Magnifier have no build in expiry date.

## Lowest Energy Consumption

at highest light production. Our Design leaves the power supply and the light source simply cool.

Due to the perfect design of all parameters there is extremely little energy loss by heat radiation.

The energy is used for producing light and not wasted for avoidable heat.

## The Overall Performance

regarding: to be able to see better, the overall performance sums up of inspection yield, quality of illumination, durability, user motivation and eye protection, also resulting in a very short return-of-investment and extra ordinary high life expectancy of the LICO magnifier. Plus the user satisfaction with our optical instruments is very very high which in return comes back positively to the company.

## Sustainability

We build magnifiers since 1988. We build them in Europe and repair and up-grade even the oldest LICO BIG EYES. Typical up-grades are:

- Change from magnetic ballast to electronic ballast
- Implementation of a dimmer
- Modernize from fluorescent bulbs to LED bulbs

We stock all parts, even for the oldest LICO Magnifiers parts are available or being made to order, therefore we can bring even the oldest LICO magnifiers to state-of-the-art.

We do not use plastic parts or thin press-formed sheet metals parts in the structure of arm or joints. Therefore LICO Magnifiers are a prime investment into more than only a very long life expectancy.

## Quality and Size of our Lenses

Our BIG EYE and BIG EYE2 lenses are extra large and made from optical crown-white glass. The lens is grinded and polished. BIG EYE2 3 Diopter lenses are within the viewing angle fully distortion free and allow a very convenient perspective with both eyes at the same time. Only such lenses assure the possibility for a fatigue-free all day use. And yes, to our knowledge our optical glass lenses are the biggest on the market.

## The Light, excellent illumination of the object

Absolute homogeneous and true daylight by proprietary LED-technology, shadow-free, without remarkable heat radiation. The light intensity is fully dimmable. We assure true colors. There is no change of the color of the object, regardless if the built in LED-light-illumination is on or off.

## The Arm

is a massive, quite versatile and well balanced full-metal construction, therefore the use is easy and life expectancy has build-in no expiry date.

## ESD -Antistatic

our full-metal-construction is conductive in itself by nature of the construction. Additionally the head itself is also grounded directly. There are no plastic arms or plastic joints which tend to receive and or store static charges. The blue paint additionally contains conductive metal oxides. The electrical connection by an appropriate ESD grounding box is highly recommended.

## The Product & Visual Performance

We welcome user feedback and suggestions for improvements to create an even better use for the individual user.

## Made in .....

We develop and manufacture since 1988 in Europe which assures fast action, close service and always the requested state-of-the-art.

## Why LICO Magnifiers? .....

We know, using LICO Magnifiers in many different technical areas our customers own an additional key for Quality improvement and extremely high yields of sorting-out-inspections at 100% controls. The staff of our customers simply can work better and inspect better which results in improved product quality and less internal and external returns which saves very much money day by day.

**NEW:  
STATE-OF-THE-ART  
TRUE DAYLIGHT LED<sub>s</sub>!**



### BIG EYE

- # 62400 EU-CE
- # 62500 EU-CE
- # 62500 EU-CE-LED-W-P
- # 62500 EU-CE-LED-UV-P



### BIG EYE 2

- # 72400 EU-CE
- # 72400 EU-CE-4Di
- # 72400 EU-CE-AR
- # 72400 EU-CE-UV
- # 72400 EU-CE-LED-W-P
- # 72400 EU-CE-LED-UV-P



#### Specification:

- 190 mm Lens diameter
- Lens size approx. 300 cm<sup>2</sup>
- 4 Diopters, Optical Glass
- Focal length approx 27 cm (4Di)
- Electronic HF power supply
- Dimmable illumination
- 34 W Flickerfree and glare-free Illumination
- 2-pole illuminated Main switch
- Massive Arm construction
- Standard-Table clamp
- ESD-safe

#### Options:

- Color in Ivory
- 5 diopter lens
- Protection cover
- Wall mount
- Table clamp
- Heavy Duty Table Clamp
- 17 kg Base Plate

#### Spare parts:

- Bulb: 13362 Glarefree (1985-2011, „old, thick“ Version)
- Bulb: 13363 Glarefree (from 2012, „new, slim“ Version)

**Switchable Version: Series 62400**

**Dimmable Version: Series 62500**



#### Specification:

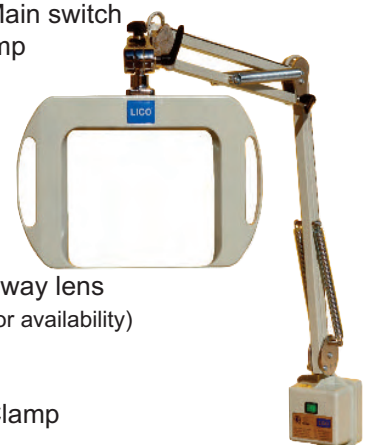
- 300cm<sup>2</sup> optical glass lens A5-format
- Lens size approx. 195 x 155 mm,
- 3 Diopters, Optical Glass
- Focal length approx 34 cm
- Electronic HF power supply
- Dimmable illumination
- 34 W flickerfree and glare-free Illumination or < 20W LED
- 2-pole illuminated Main switch
- Standard-Table clamp
- ESD-safe

#### Options:

- Color in Ivory
- Protection cover
- Finger protection
- Antireflective lens
- 10 Diopter Swing- away lens
- 4 Diopter lens (ask for availability)
- Wall mount
- Table clamp
- Heavy Duty Table Clamp
- 17 kg Base Plate
- LED-Light, 5000K, white or UV

#### Spare parts:

- FS-Bulb: #13392 glarefree 5500K
- FS-Bulb: #13393 Ultraviolet
- Yellow-light on request



All our magnifiers are  certified and marked

# The BIG EYE 2 in Blue

LICO

Part number 72400-EU-CE

Our standard for industrial inspection

Extreme eye-protecting even when used all day long !

Very convenient viewing area

Perfect for all day use!

Allows enormous working depth

Focus: ~ 34 cm

## BIG EYE 2: XL 200 x 150 mm lens

3 Diopter  
Reach of arm: 1 m

Complete with electronic Dimmer,  
2-pole power switch  
and table clamp

ESD-safe



### Specification:

- Extra large optical glass lens approx 195 x 155 mm = ~ 300cm<sup>2</sup> / A5-format
- real DISTORTION FREE
- ground
- polished
- Crown-white
- Light quality = Daylight, nom. 5000K
- Dimmer included:
- Adjust light step-free
- sturdy long life metal construction
- proven many thousand times for many decades.

### Options:

- The ultimate perfect LICO-LED-illumination
- UV-Lightsource, Fluorescent or UV-LED,
- Anti reflective coated lens, removes about 2/3 of reflecting light
- 10x Swing-away-lens

### References:

Commerce & Industry  
Automotive  
Electronics  
Hybrids  
Components  
PCBs  
Air- & Space industry  
Police & Military  
Safety industry  
Fine mechanics  
Bearings & Gears  
Engine parts  
Marine  
and many more.

## BIG EYE II

The ideal magnifier for production and QS



Part number 72400-EU-CE

## BIG EYE 2:

### XL 200 x 150 mm lens

3 Diopter

Reach of arm: 1 m

Complete with electronic Dimmer,  
2-pole power switch  
and table clamp

ESD-safe



## Our standard for industrial inspection

### Specification:

- Extra large optical glass lens  
approx 195 x 155 mm = ~ 300cm<sup>2</sup> / A5-format  
real DISTORTION FREE
- ground
- polished
- Crown-white
- Light quality = Daylight, nom. 5000K
- Dimmer included
- Adjust light step-free
- Sturdy long life metal construction
- Proven many thousand times  
for many decades.

### Options:

- The ultimate perfect LICO-LED-illumination
- Anti reflective coated lens,  
removes about 2/3 of reflecting light  
ask for availability!
- 10x Swing-away-lens





# The BIG EYE 2 with LED

LICO

Part number 72400-EU-CE-LED

## The LICO-LED-light:

- Extra many daylight white or UV-Special-LEDs
- Selected and better than Premium-quality-LEDs
- Daylight white illumination
- Spot-free due to a very big light emitting area
- Operation in low energy mode results in:  
Very homogenous and evenly illumination
- Free of cast shadows
- Free of blue shadows
- Almost reflexion free illumination

## How to order:

**72400-EU-CE-LED-W-P \*)**

**72400-EU-CE-LED-UV-P**

72400-EU-CE-LED-W-P-4Di

72400-EU-CE-LED-UV-P-4Di

-P stands for plastic cover,  
treated antistatic

-W stands for daylight white light

-UV stands for UV-light

**\*) = Standard**



**Retrofit-offer:**  
We retrofit any BIG EYE into a  
State-of-the-Art BIG EYE-LED.  
Ask for a quote!

## Specification:

- Extra large optical glass lens  
approx 195 x 155 mm = ~ 300cm<sup>2</sup> / A5-format
- real DISTORTION FREE view
- ground
- polished
- Crown-white
- Light quality = Daylight, 5000K
- Dimmer included
- sturdy long life metal construction
- proven many thousand times, for many decades.
- LED-Light:
- After many years of R&D the LICO LED-BIG EYE2 now  
offers the perfect solution in illumination.  
Especially convenient for all day use, wearer of glasses  
and mostly suitable with visual impairment.

## BIG EYE 2:

**XL 200 x 150 mm lens**

3 Diopter

Reach of arm: 1 m

Complete with electronic Dimmer  
2-pole power switch  
and table clamp

ESD-safe



**Options, ask for availability:**

- AR, antireflective coated lens
- 4 Dio, 4 Diopter lens
- 10x Swing-away-lens

Part number 62500-EU-CE

## BIG EYE: 190 mm XL-lens

4 or 5 Diopter lens

Reach of arm: 1 m

Complete with electronic Dimmer,  
2-pole power switch  
and table clamp

ESD-safe



### Specification:

- 34W high power illumination
- X-Large optical glass lens,  
190 mm Diameter, ~ 300 cm<sup>2</sup>  
ground  
polished  
Crown-white
- Light quality = Daylight, 5500K
- Dimmer included
- Adjust light step-free
- Sturdy long life metal construction
- Proven many thousand times  
for many decades.
- ESD-safe

# The BIG EYE Round in Blue

LICO

Part number 62500-EU-CE

## BIG EYE: 190 mm XL-lens

4 or 5 Diopter lens

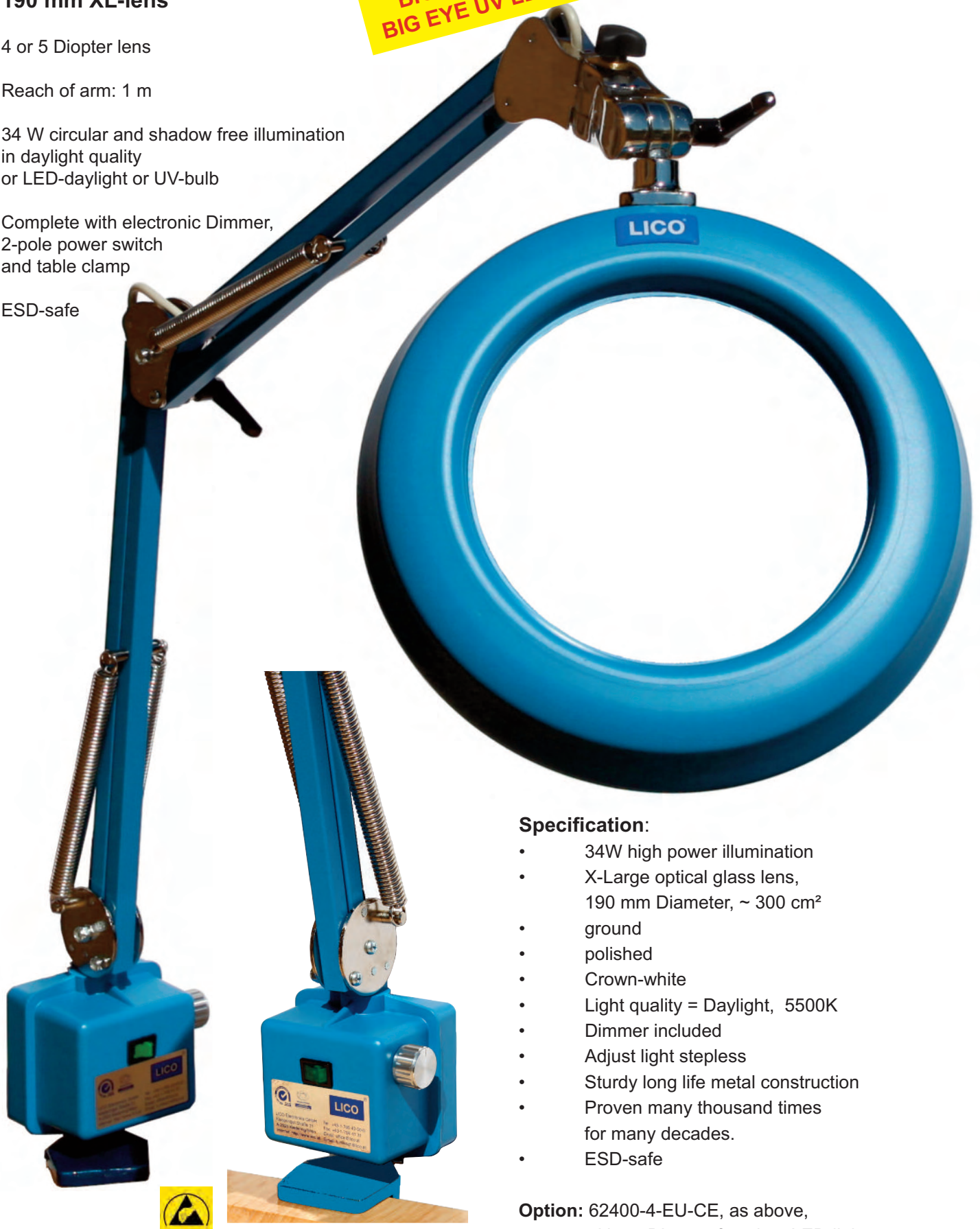
Reach of arm: 1 m

34 W circular and shadow free illumination  
in daylight quality  
or LED-daylight or UV-bulb

Complete with electronic Dimmer,  
2-pole power switch  
and table clamp

ESD-safe

**BIG EYE Series is going LED:**  
**BIG EYE LED: 62500-EU-CE-LED-W-P**  
**BIG EYE UV LED: 62500-EU-CE-LED-UV-P**



### Specification:

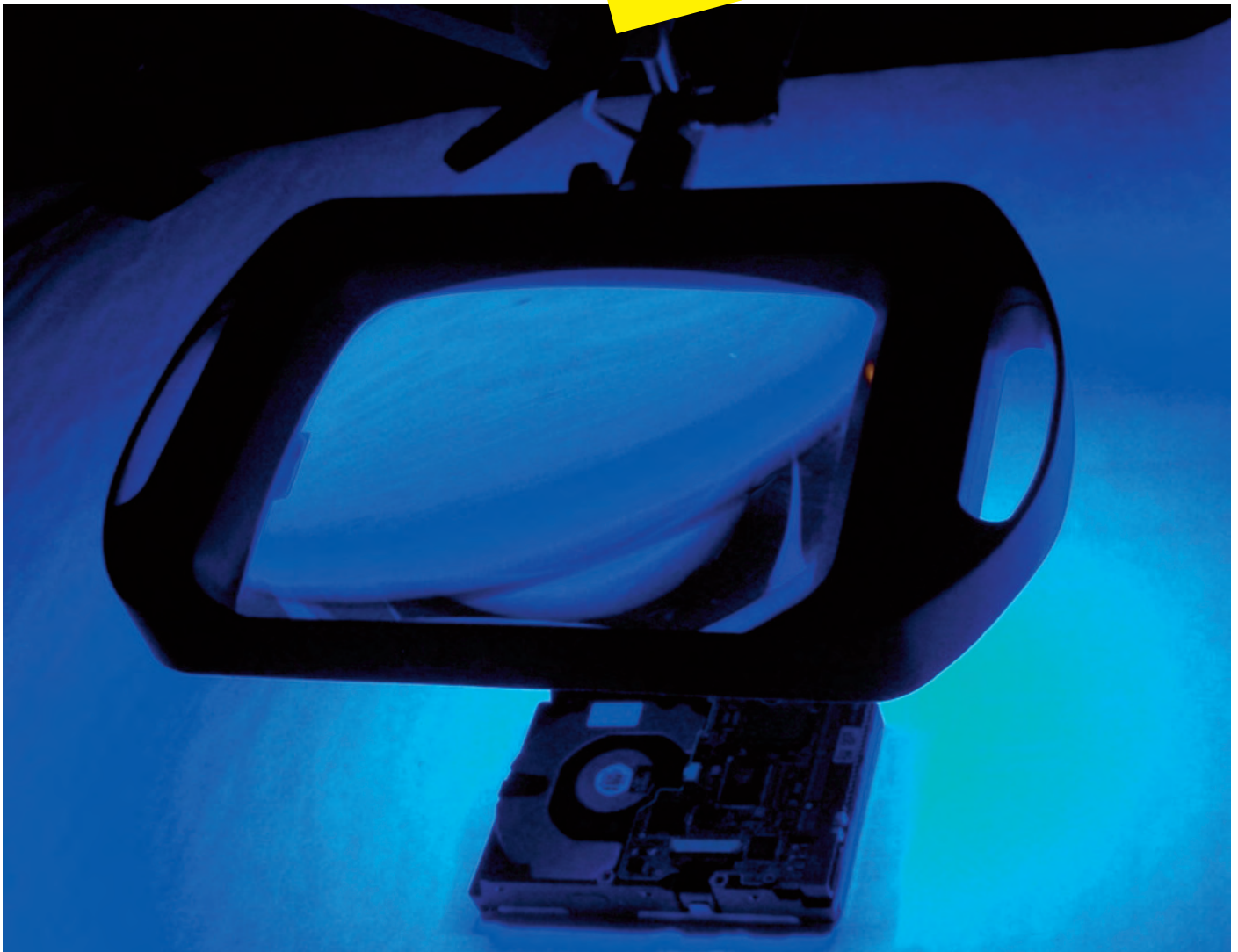
- 34W high power illumination
- X-Large optical glass lens,  
190 mm Diameter, ~ 300 cm<sup>2</sup>
- ground
- polished
- Crown-white
- Light quality = Daylight, 5500K
- Dimmer included
- Adjust light stepless
- Sturdy long life metal construction
- Proven many thousand times  
for many decades.
- ESD-safe

**Option:** 62400-4-EU-CE, as above,  
without Dimmer function, LED-light

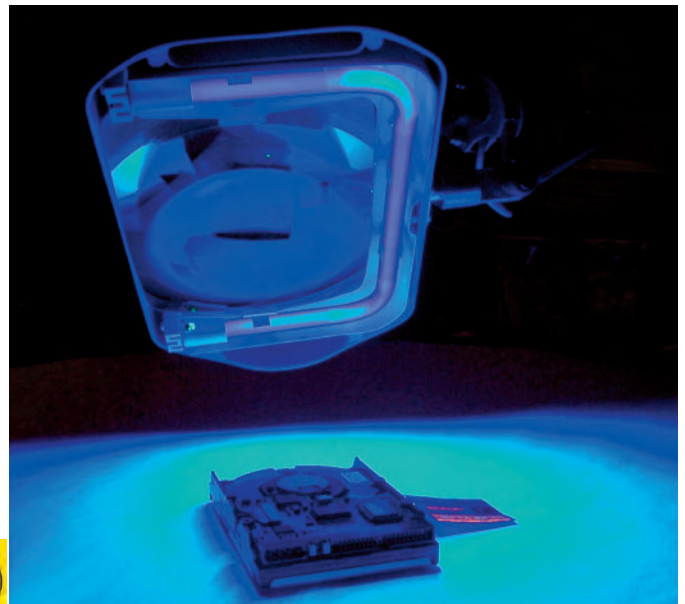
Part number 72400-EU-CE-UV

The **BIG EYE2** with high density UV-bulb  
UV - spare bulb: part number: 13393

**BIG EYE series now available with UV-LED,  
BIG EYE2, p/n: 72400-EU-CE-UV-P  
BIG EYE, p/n: 62500-EU-CE-UV-P**



Wave length of the lamps: UV bulb version: approx. 350 – 410 nm, UV LED: approx. 400 – 410 nm, UV LED Broadband: 365-405 nm



# New Head-Joint & Good to Know

LICO

for the BIG EYE and the BIG EYE2

- Simple to use
- Easy to use
- Improved flexibility
- Attractive design
- Improved construction
- Full metal mechanics



available product-wise



## Optical glass lens: Diopters & Magnification:

Data of our optical lenses:

|                 |                              |                     |
|-----------------|------------------------------|---------------------|
| 3 Diopter lens: | Magnification approx. 1,75X, | Focus approx. 34 cm |
| 4 Diopter lens: | Magnification approx. 2,00X, | Focus approx. 27 cm |
| 5 Diopter lens: | Magnification approx. 2,25X, | Focus approx. 17 cm |



## Grounding & ESD:



Our magnifiers are grounded full metal constructions and shall be connected to an appropriate ESD- or grounding box to comply with the given company internal ESD-workplace regulations. Details can be found in the Owner's manual.

## Operation, Maintenance & Care:



Our magnifier are built for very long life. Advise for operation, maintenance and care is found in the Owner's manual or at LICO. Corresponding care will assure a trouble free operation for many years.

## Painting in Custom COLOURS:

Please send your inquiry!

**11461 Table Edge Clamp,**

This clamp is supplied as a standard fixture with all our magnifiers.

Color: blue, ivory or black

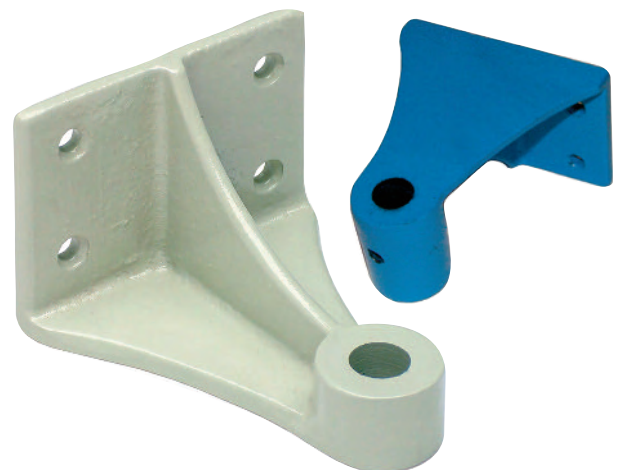
**11463 Screw Down Fixture, Heavy Duty**

Color: blue, ivory or black

**11464 Table Clamp, Heavy Duty** ( as long as stock lasts)

Double, with two fixtures

Color: blue, ivory or black

**11462 Wall Mount**

Color: blue, ivory or black

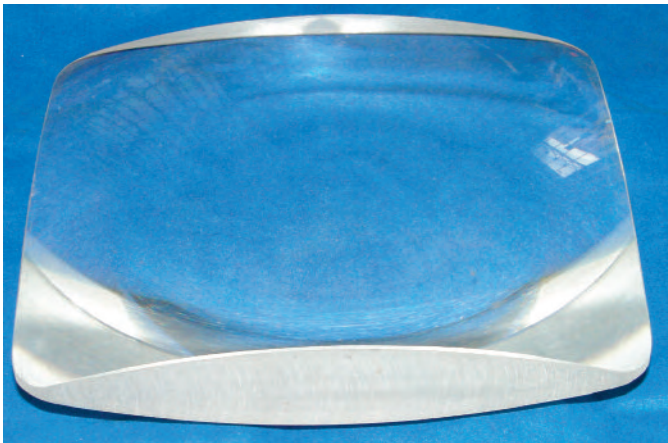
**Attention:** The ivory picture is only an illustration. The wall mount **mandatory** has to be **mounted** and used as shown on the blue picture: **flat side up !!** Otherwise break, injury and damage may occur!

**11458 Heavy Base Plate**

Weight 17,5 kg

Use instead of other fixtures  
Color: ivory or black

**Attention:** Despite of the high weight it is possible to capsize the lamp

**Spare lenses:**

- 13157 4 Dio lens BIG EYE , round
- 13160 Dio lens BIG EYE 2
- 13161 4 Dio lens BIG EYE 2 (check availability)
- 13160-AR 3 Dio lens-AR, BIG EYE 2, (check availability)

**Swing away lens**

- 13167 10 Diopter-additional lens, Magnification: 3,5X
- 13167P Mounting plate

**USE swing away lenses ONLY between object and BIG EYE lens**

**Spare springs for 72400 :**

- 10241 Upper arm spring 3Di-lens
- 10249 Upper arm spring 4Di-lens
- 10245 Spring between socket and knee 3Di + 4 Di-lens

**Optional:**

gold plated springs (check availability)

**11501 Dust cover - Sun protection**

Linnen bag with elastic band,  
Color: blue or ivory

NEW 2014: Micro-fibre dust cover  
p/n **11501-MF** (blue only)

**11502-MF** : Special Cleaning cloth for lenses,  
especially suitable for AR-lenses

**Service is our success:**

We are a certified Master Operation and we supply long-life products. Our magnifiers are not throw-away products, by all means a life of 10, 20 years or even longer is no curiosity. Therefore we proudly service all our magnifiers on our own in Europe.





### 13367 Finger protection for 72400 BIG EYE 2 fluorescent bulbs

transparent cover with mounting clips.  
Simply clip the cover on to the installed bulb.

Ideal for mechanical works under the lens to protect the bulb or when using the magnifier as a reading lamp.

### Spare bulb for the BIG EYE 2

p/n 13392,  
34 W Special bulb, glare free, daylight

p/n 13393,  
34 W special bulb, Ultraviolet



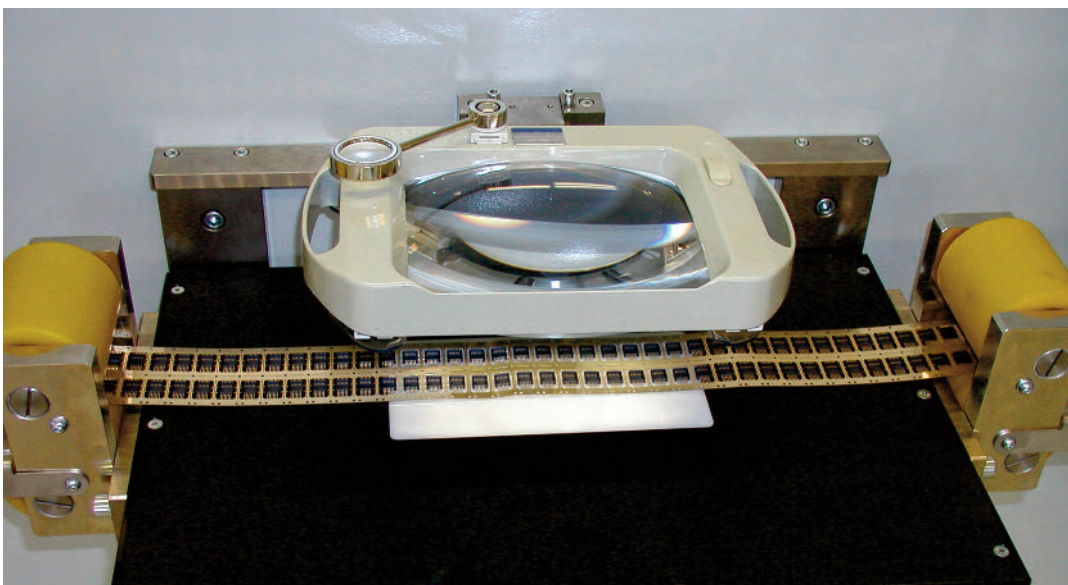
### Spare bulb for the BIG EYE



p/n 13362,  
34 W Special bulb, glare free, daylight  
(1985-2011, "old, thick" Version)

p/n 13363,  
34 W Special bulb, glare free, daylight  
(2011- "new, thin" Version)

### Application example: Illuminated Machine Magnifier



Example: use as a  
Split-unit:

The power supply is mounted inside the machine control box, the lens-head is mounted appropriate on to the machine.



This Industrial Standard with Innovative Design and energy-saving and newest LED-technology.

*Ideal for Labor and R&D*



**178 x 133 mm  
LED-Magnifier**

**82400-4-EU-CE  
in Perlblue-Metallic**



**178 x 133 mm  
LED-Magnifier**

**82400-4-EU-CE  
in shadow-white**



**150 mm  
LED-Magnifier**

**42400-4-EU-CE  
in Crystal-Perlred**



**190 mm  
LED-Magnifier**

**62400-4-EU-CE  
in Anthrazit-Metallic**

Max. Power consumption: energy saving 8W only at max. 7.500 LUX Illuminance  
 Big round Magnifiers are also available with 5 Diopter lenses. Electronic Dimmer and Section Control is Standard.  
 Supply incl. Table Clamp  
 Options: Different Colours, Screw Down fixture, Wall Mount, Dust Cover.

## Extra-Large Designer-Magnifier, 150mm, 190 mm Lens

Ultralow Power Consumption: max. 8W  
only

Newest LED Technique

Very bright, dimmable Light

Sections switchable

4 or 5 Diopter lens

Dimmer

Timer



Proven, solid Construction

Robust and long-life  
Metal Arm, Joints  
and Head

Reach: ~ 1m

## Extra-Large Magnifier with White & UV-light, with 4 Diopter 178x133 mm Lens

Ultralow Power 8W Consumption:  
30VDC external Power supply

Newest LED Technique  
Both visible light & UV-light  
or White Light only.

Very bright dimmable Light

Switchable Functions:  
White or UV or  
both together

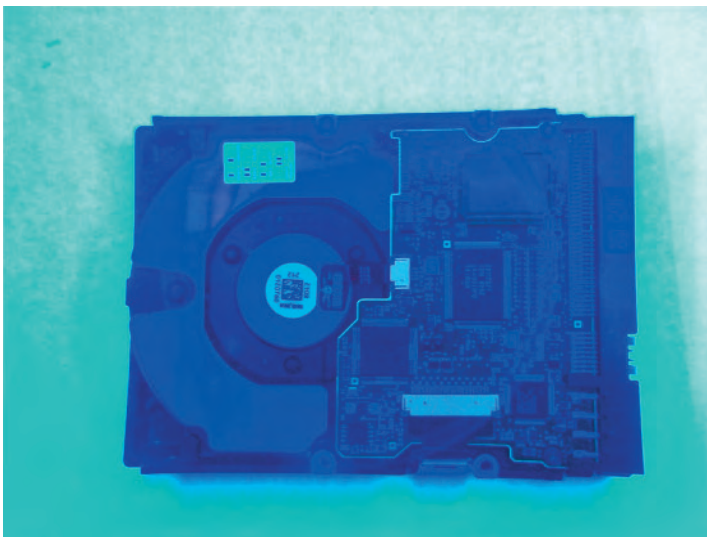
Dimmer

Timer

82400-4-EU-CE  
82400-4-UV-EU-CE



Viewing Sample:



Proven, solid  
Construction

Robust and long-life  
Metal Arm, Joints  
and Head

Reach: ~ 1m

## High Resolution Superscope

The all new Full-HD SUPERSCOPE 2 – the Sanxo digital-microscope offers a complete setup for magnified high frame-rate live image inspection. The idea of leaving huge open space above the working surface was emphasized during development. This approach allows the object under inspection to be easily moved around in an ergonomic working position. This, along with the outstanding image quality and fast digital zoom makes this product unique in its field.

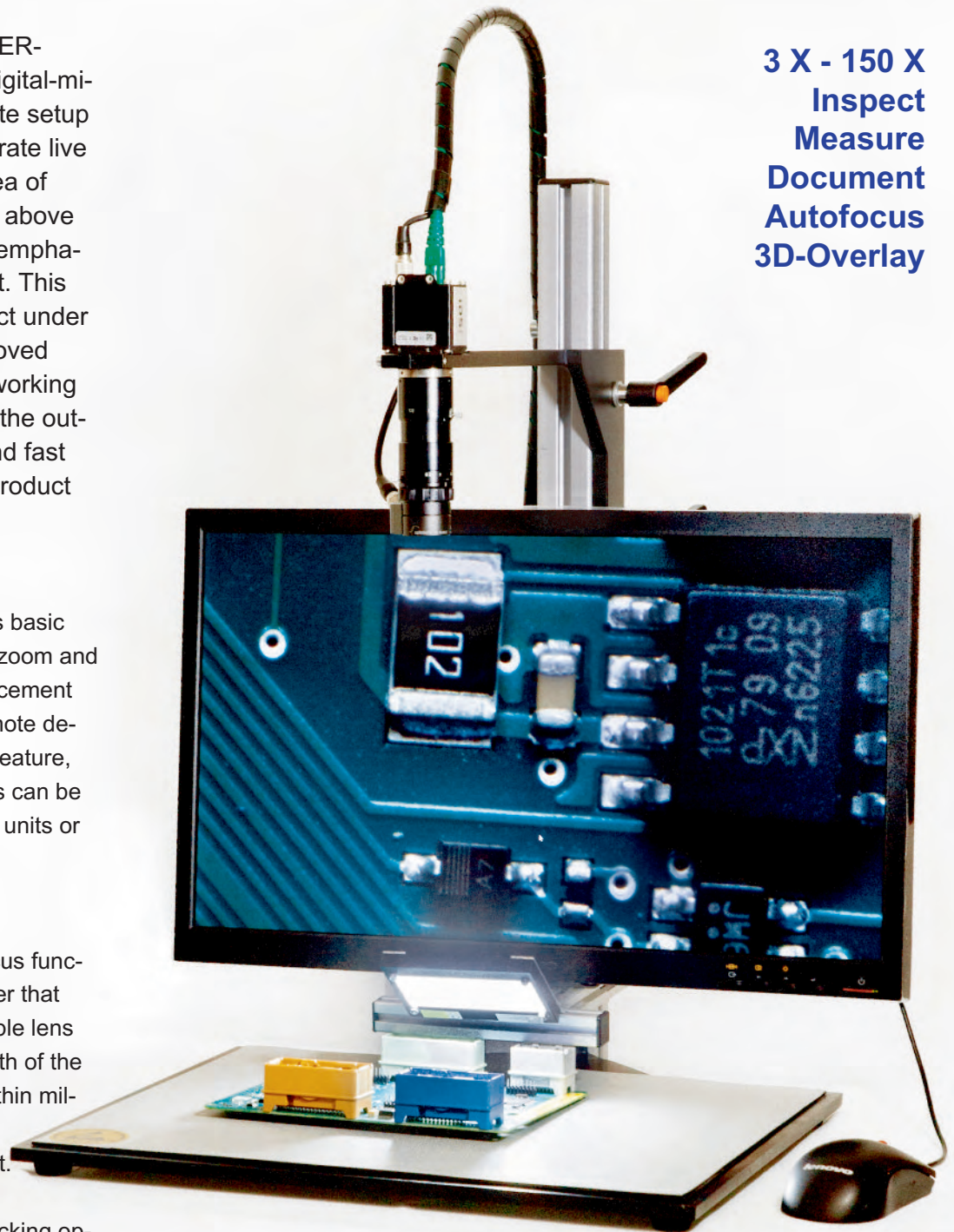
### Basic Features

In use, the application offers basic functionality such as digital zoom and pan, real-time image enhancement and image saving (local/remote device). Using the calibration feature, distance between two points can be measured using either pixel units or calibrated real-world units.

### Advanced Features

There is an optional autofocus function based on elastic polymer that uses the electronically tunable lens by Optotune. The focal length of the electrical lenses is tuned within milliseconds by applying a control current. By connecting such a lens, autofocusing and image stacking options become available.

**3 X - 150 X**  
**Inspect**  
**Measure**  
**Document**  
**Autofocus**  
**3D-Overlay**



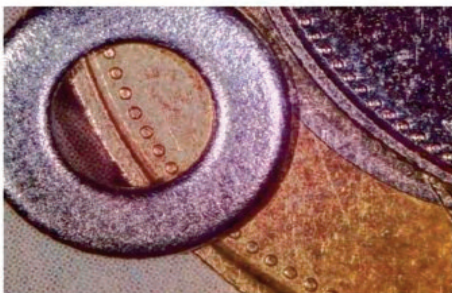
### Setup

The stand has adjustable holders for both camera and monitor that enable influencing imaging attributes, such as the camera distance, and operating ergonomics. All setups come with a heavy-duty platform and an adjustable stand, a Full HD resolution monitor and a PC. Different setups are available to fit the desired use.

|              | SANXO-HD Scope E   | SANXO-HD Scope U3                              | SANXO-HD Scope U2                              |
|--------------|--|--|--|
| Camera       | IDS Imaging 10 MPixel GigE color camera  | IDS Imaging 5 MPixel USB3 color camera         | IDS Imaging 5 MPixel USB2 color camera         |
| Lens         | Megapixel TAMRON 50/25mm   | Megapixel TAMRON 50/25mm                       | Megapixel TAMRON 50/25mm                       |
| Monitor      | Full HD resolution 22"   | Full HD resolution 22"                         | Full HD resolution 22"                         |
| PC           | Gigabyte® PC i5  | Gigabyte® PC i3                                | Gigabyte® PC Celeron 1037U                     |
| Software     | User- and Measuring software included, Documentation, Picture Overlay & 3D-Imaging Basics, Videorecording, Data-Output: USB-Connection |  |  |
| Illumination | SAN-14W white illumination (12VDC) 209x98x20mm   | SAN-14W white illumination (12VDC) 209x98x20mm | SAN-14W white illumination (12VDC) 209x98x20mm |
| Frame rate   | 25 FPS   | 25 FPS   | 12 FPS   |
| Price EUR    | 3.300,00 EUR   | 2.890,00 EUR                                   | 2.550,00 EUR                                   |

**Optional accessories:**

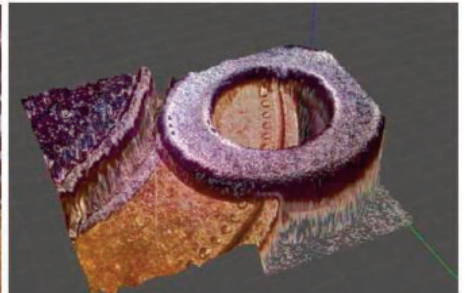
| Description   | Qty | Price      |
|---|-----|------------|
| - Tunable lens: EL-10-30-Ci-VIS-LD-MV Controller: EL-E-4iMV + cable Including: Autofocus-function | 1   | 750,00 EUR |
| - XY-Table (418x290x25mm)   | 1   | 255,00 EUR |
| -Dual light source<br>2 pcs SAN-14W white illuminations including ITEM frames                     | 1   | 430,00 EUR |



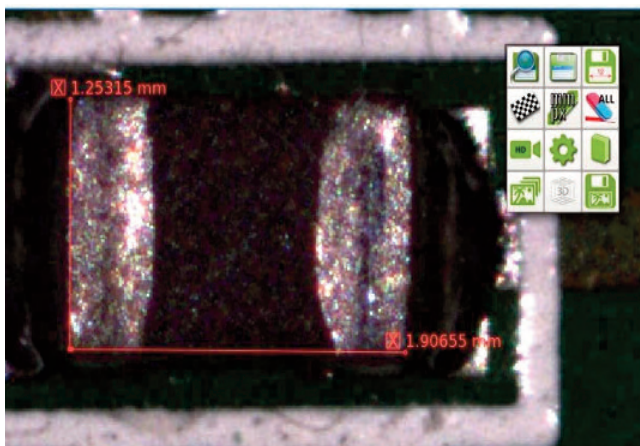
Super Image



Single Image (background is in focus)



3D mesh surface



*Inspect*

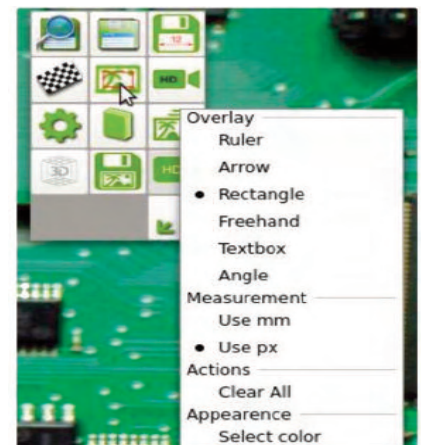
*Measure*

*Save entire sensorview*

*Save overlay*

*Create 3D-Image*

*Record Video*



## TAMRON megapixel 50mm focal lens and 10Mpix Gig-E camera

| Nr. | Object distance<br>(Working Distance) | Magnification<br>D1 D2 D3 | Accessory           |
|-----|---------------------------------------|---------------------------|---------------------|
| 1   | 530 mm                                | 7.3x 14.6x 21.9x          | none                |
| 2   | 290 mm                                | 13.75x 27.5x 41.25x       | none                |
| 3   | 192 mm                                | 21.6x 43.2x 64.8x         | none                |
| 4   | 95 mm                                 | 50.5x 101x 151.6x         | 20mm extension ring |

## TAMRON megapixel 25mm focal lens and 10Mpix Gig-E camera

| Nr. | Object distance<br>(Working Distance) | Magnification<br>D1 D2 D3 | Accessory           |
|-----|---------------------------------------|---------------------------|---------------------|
| 1   | 547 mm                                | 3,1x 6,3x 18,8x           | none                |
| 3   | 285 mm                                | 6,3x 12,5x 37,5x          | none                |
| 4   | 243 mm                                | 7,3x 14,6x 43,8x          | none                |
| 6   | 207 mm                                | 8,6x 17,3x 51,8x          | none                |
| 8   | 120 mm                                | 14,4x 28,8x 86,4x         | 1 mm extension ring |

**Accessories**

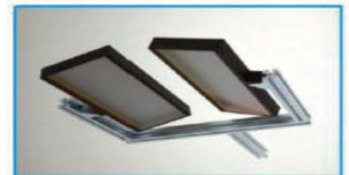
- To fit every possible need, additional accessories are available, such as the “liquid-lenses” = electrically tunable lenses based on elastic polymers = Axial focusing over several 100 micrometers within milliseconds as well as additional illumination and a range of XY tables.

**Tunable (autofocus) lenses**

These electronically tunable lens are produced by the Swiss company Optotune. The focal length of the electrical lenses is tuned within milliseconds by applying a control current. With this extension, the functionality of the SANXO-Scope HD can be extended.

**Dual lighting**

For applications where increased lighting is needed, the SANXO-Scope HD can be ordered to have a dual lighting, which further eliminates every little shadow from the object being analysed.

**Hand-operated XY table**

This XY table provides easy manual operation where tilting is not important and simple and robust stage is needed.

Stage size: 418x290x25mm



Prices: In EUR excl VAT per piece or unit, Ex Works LICO, packing & transport cost are quoted individually,

Prices are valid until December 2016

**Development & Production:** Made in Hungary, EU

LICO Electronics GmbH, Klederinger Str. 31, A-2320 Kledering, Austria [office@lico.at](mailto:office@lico.at)

LICO Hungaria Kft, Raba u.4, H-2030 Erd, Hungary [office@lico.hu](mailto:office@lico.hu) / [h.miksch@lico.at](mailto:h.miksch@lico.at)

LICO Mecatronic S.R.L., Str.Bucinului Nr.2B, RO-540526 Targu-Mures, Romania [office@lico.ro](mailto:office@lico.ro)

[www.eurolupe.com](http://www.eurolupe.com)



## FL-3000

### The ColdLight source

Fan-cooled 150W  
High-Power-Halide lamp,  
Dimmable light

enormous light output,  
depending on focussing more  
than 10.000 Lux

**Attention:** This light source is for  
industrial use only, The light can be  
extremely bright. Never look directly  
into the light, permanent eye dam-  
age may occur.



### FL-3000-D

FL-3000 with double goose neck



### FL-3000-A

FL-3000 with glass fibre ring light



### AS3739 glassfibre ring light



### EG2823 double goose neck



ML 759-2 Lens set

## The perfect table top Microscope

☀ portable, precise, easy to use

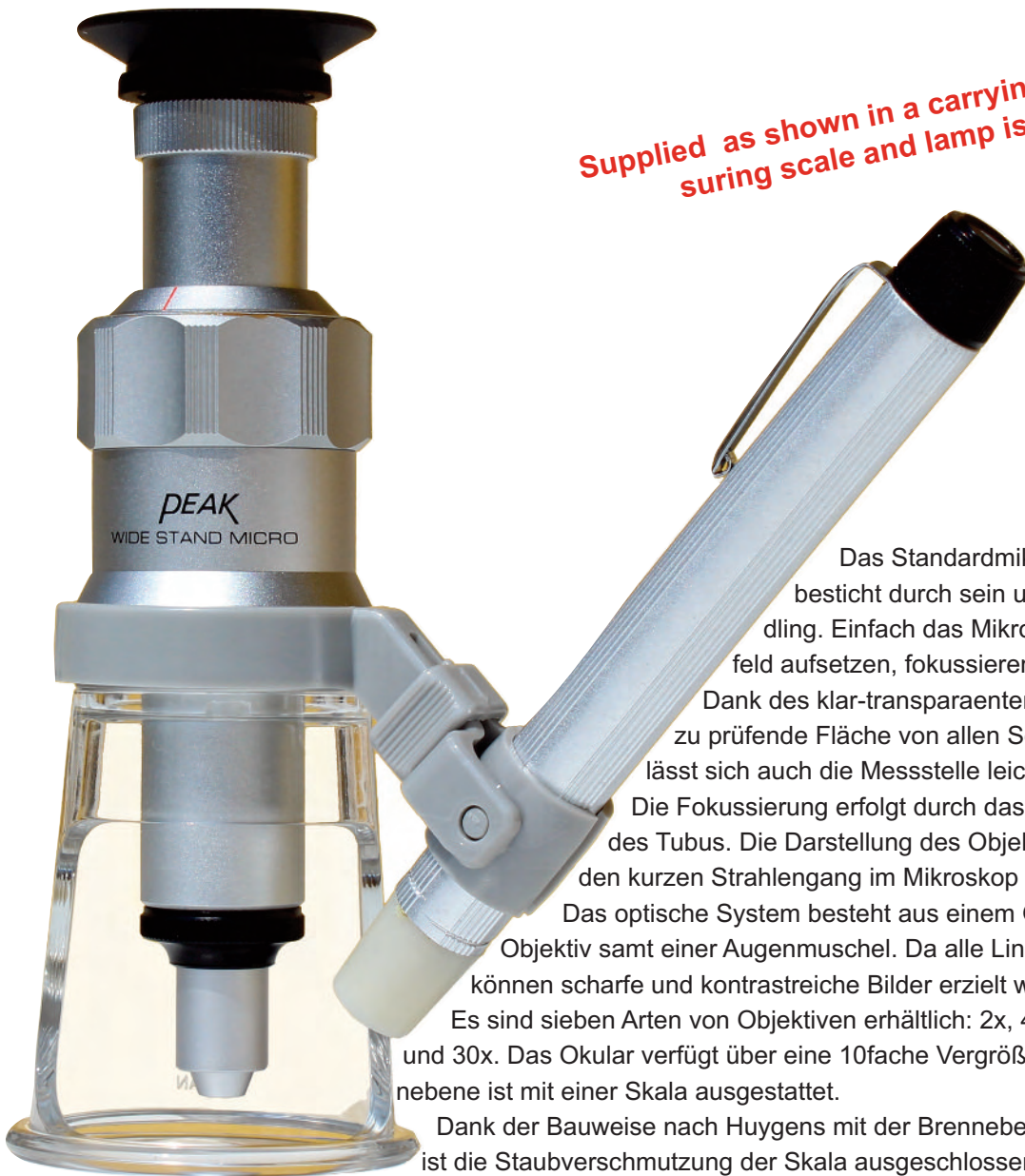
- ▶ Magnification from 20 X to 300 X
- ▶ Modular - extendable



| Part number          | 2034-20     | 2034-40     | 2034-60     | 2034-100     | 2034-150     | 3024-200     | 2034-300    |
|----------------------|-------------|-------------|-------------|--------------|--------------|--------------|-------------|
| <b>Magnification</b> | <b>20 X</b> | <b>40 X</b> | <b>60 X</b> | <b>100 X</b> | <b>150 X</b> | <b>200 X</b> | <b>300X</b> |
| Working distance     | 36,0 mm     | 18,7 mm     | 10,8 mm     | 5,7 mm       | 9,2 mm       | 6,7 mm       | 4 mm        |
| Adj. Focus           | Yes         | Yes         | Yes         | Yes          | Yes          | Yes          | Yes         |
| Scale in focus       | Yes         | Yes         | Yes         | Yes          | Yes          | Yes          | Yes         |
| View area            | 7,2 mm      | 3,6 mm      | 2,4 mm      | 1,45 mm      | 0,96 mm      | 0,72 mm      | 0,48 mm     |
| Measuring length     | 6 mm        | 3 mm        | 2,0 mm      | 1,2 mm       | 0,9 mm       | 0,6 mm       | 0,4 mm      |
| Scale resolution     | 0,1 mm      | 0,05 mm     | 0,02 mm     | 0,01 mm      | 0,005 mm     | 0,002 mm     | 0,001 mm    |
| Numeric Aperture     | 0,06        | 0,12        | 0,15        | 0,19         | 0,24         | 0,35         | 0,4         |
| Focus                | 35,0 mm     | 22,0 mm     | 16,5 mm     | 10,7 mm      | 7,3 mm       | 5,7 mm       | 3,9 mm      |
| Eyepiece             | 10-fach     | 10-fach     | 10-fach     | 10-fach      | 10-fach      | 10-fach      | 10-fach     |
| Aux. lens            | 2-fach      | 4-fach      | 6-fach      | 10-fach      | 15-fach      | 20-fach      | 30-fach     |

|                |             |
|----------------|-------------|
| Weight         | 241 Grams   |
| Carryingbox    | included    |
| Dimension      | 63 x 172 mm |
| Standard scale | included    |
| View           | mirrored    |





Supplied as shown in a carrying box, the measuring scale and lamp is included

Das Standardmikroskop Serie 2034 besteht durch sein unkompliziertes Handling. Einfach das Mikroskop auf das Messfeld aufsetzen, fokussieren - fertig.

Dank des klar-transparenten Acryl-fußes ist die zu prüfende Fläche von allen Seiten einsehbar. So lässt sich auch die Messstelle leicht auffinden.

Die Fokussierung erfolgt durch das koaxiale Verdrehen des Tubus. Die Darstellung des Objektes erfolgt durch den kurzen Strahlengang im Mikroskop spiegelbildlich.

Das optische System besteht aus einem Okular und einem Objektiv samt einer Augenschmelze. Da alle Linsen beschichtet sind, können scharfe und kontrastreiche Bilder erzielt werden.

Es sind sieben Arten von Objektiven erhältlich: 2x, 4x, 6x, 10x, 15x, 20x und 30x. Das Okular verfügt über eine 10fache Vergrößerung und die Brennebene ist mit einer Skala ausgestattet.

Dank der Bauweise nach Huygens mit der Brennebene im Linsensystem, ist die Staubverschmutzung der Skala ausgeschlossen.

Die Linse, die dem Auge im Okular am nächsten ist, kann durch Drehen des Einstellrings bewegt werden, so dass die Skala je nach den Dioptrien des Betrachters eingestellt werden kann. Die zur jeweiligen Vergrößerung (Objektiv) zugehörigen Okulare mit integrierten Messskalen lassen sich einfach durch Herausziehen auswechseln. Sollen zusätzliche Objektive nur zur visuellen Kontrolle eingesetzt werden, benötigen Sie keine weiteren Okulare.

Zukauf von Wechselobjektiven: Sollten Sie beispielsweise ein Mikroskop mit 100-facher Vergrößerung mit der 0,01 mm Skala nutzen, ist nach dem Einsetzen eines anderen Objektives das Messergebnis falsch. Deshalb soll das zusätzliche Objektiv, mit dem Sie messen wollen, mit dem dazugehörigen Okular bestellt werden.

Die seitliche Beleuchtung ermöglicht Messungen auf dunklen Oberflächen oder in abgedunkelten Räumen. Für den Betrieb sind zwei 1,5-Volt-Mignon-Batterien erforderlich. Geliefert wird das Mikroskop in einer gepolsterten Transportbox. Sie bietet für weitere vier Objektive, die als Zubehör lieferbar sind, sicheren Transportraum.

Der Teile- und Zubehörkatalog ist auf [www.eurolupe.com](http://www.eurolupe.com) erhältlich.

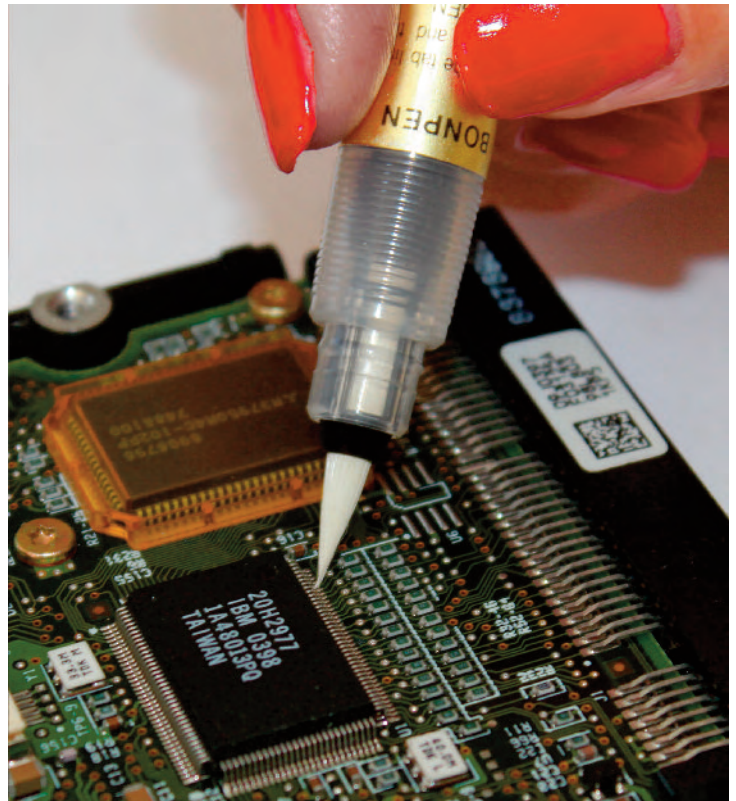
**BONPEN,**

These handy Bon Pens allow for very accurate flux dispensing on the work area, while eliminating dripping and flooding, making it irreplaceable for every SMD-workplace

**BONPEN-Materials:** PP, PE, Nylon.

BONPEN is **Suitable for:** Fluxes, Alcohol, Fluoric Lube, Primers, Flux inhibitors, Water

**BON-102A**, 7-pcs-Set consisting of 1pc of all BON-102 PENS (including BON102S)



## The LICO-Superscope, only available as well checked & refurbished pre-owned.

This is one of the smartest purchase you can make, \* supply as long as stock lasts.

### Microscope with 14" Display

Using this unique solution the operator can stop leaning over objects. Neck and backpain is a thing of the past!

The Super Scope offers a distortion-free Zoom-range of 4X - 40X (with optional Aux-lens can be reached 8X - 80X, as far as lens is available. A big working distance lens to object allows a convenient working depth on the objekt.

Including a LED light source with dimmer. The brightness can be regulated step-free. Optionally other light sources are available.

A large 14" high-resolution display from SONY Medical allows a very convenient inspection and work under the microscope.

A PAL-Video-output for Framegrabbers available on the PC-market rounds up the universal use of the versatile Microscope. Sliding arm and heavy stand-base is included.



www.bonkote.eu



BR102



BR102, Spare Tips, cone shape short, L 14mm, W 4,3mm, fine nylon-brush

BON102S



BR102S



BR102S, Spare Tips, cone shape short, ultrafine, L 10mm, W 2,5mm, very fine nylon-brush

**NEW !**

BON102T



BR102T



BR102T, Spare Tips, cone shape long, L 18 mm, W 5,2mm, fine nylon-brush

BON102D



BR102D



BR102D, Spare Tips, flat-chisel shape, L 17 mm, W 6,2 mm, fine nylon-brush

BON102B



BR102B



BR102B, Spare Tips, cone shape short, L 9,5 mm, W 4,5 mm, Fine felt

BON102F



BR102F



BR102F, Spare Tips, flat-chisel shape, L 10 mm, W 4,5 mm, Fine felt

BON102K



BR102K



BR102K, Spare Tips, angled flat-chisel shape, L 12,5 mm, W 4,5 mm, Fine felt

CA102

Replacement Cartridge2, 7ccm



**BON102 = BR102 + CA102**

**Over all Length: BON102 approx. 170 mm**  
the Printed Version scale is a bit smaller than 1:1

## The Packaging:



BONPEN &amp; BR-Spare Tips: Packages of 5 pcs.



BR-Spare Tips: Packages of 5 pcs.

**BON-102A** - Set consists 1 of each:  
 BON-102, BON-102S, BON-102T, BON-102D, BON-102B,  
 BON-102F, BON-102K

www.bonkote.eu

## The Bonkote Fine Cleaner

**Are you using wet sponges or metal sponges to clean your soldering tips?**

It is proven that such temperature shocks slowly but surely crack the coating surface of soldering tips. The temperature drop can be even 50 - 100°C And such circumstance can lead into instable soldering temperature. And finally such temperature shocks reduces the life expectancy of soldering tips remarkably.

Metal sponges scratch the fine surface of soldering tips which also reduces the life expectancy.

Bonkote round stainless steel bars and the smooth high temperature rubber **can save considerably** on your soldering tip life by avoiding scratches and high temperature drops.



The Fine-Cleaner consists of a High temperature rubber part and a Magnet



This Magnet can be fixed at the bottom of the Cleaner



Strong residues can be pre-cleaned or cleaned at the rounded stainlessbars.



Simple residues can be cleaned off the tip at the rubber lip

### Types:

| Model | Inner Diameter | Outer Diameter | Weight |
|-------|----------------|----------------|--------|
| B-250 | 25 mm          | 50x22 mm       | 65 g   |
| B-500 | 50 mm          | 87x30 mm       | 185 g  |

Materialies: Magnetic plate, High temperature-rubber, rounded stainless steel bars

## The Desoldering Braid® 3S-Wick® The Original

3S-Wick® patented vacuumization technology is preferred by leading organizations worldwide. Vacuumization yields a high-speed response wick for quickest and safest desoldering. A simultaneous comparison dip-test (MIL-STD-202 E Method 208 C) with competitive wicks will show the differences.

3S-Wick® flux is based on mildest non-corrosive, non-hygroscopic, non-conductive rosins of 'no-clean' quality.

3S-Wick® conforms to the most stringent soldering standards set worldwide i.e. DIN-8516, DIN-8527, DIN-8511-F-SW32 (German), BS-441, DTD-599A (British), JIS-C-2519, JIS-C-2512 (Japanese), ASTM-B284, NASA Publications MIL-F-14256D type W and A, NPC-200-4 Quality Publication, NASA-SP5002 Soldering Electrical Connections, NASA-NHB-5300 Reliability and Quality Assurance Publications, and others.

3S-Wick® is used and has been used for the most demanding desoldering operations in spacecraft and military electronics. 'No-clean' residues can be left safely on the desoldered area.

### IMPORTANT:

The minimal residues left on the soldered area do also act as a solderability conservation for that area, should the resoldering not be done immediately there.

The technical term 'no-clean' Wick found in desolder braid descriptions and specs usually refers to a wick whose desoldering operation only leaves a minor amount of flux on the desoldered area and which do use a flux composition whose residues can be left safely on the desoldered area.

A fluxless wick as often proposed does not exist and can not function by metallurgical reasons.

LOTSAGLITZE® is a German word created about 36 years ago by Spirig and is registered as a trademark for Spirig. The commercial wicking technology to remove solder was established in Europe by Spirig.

Entlötlitze is also a recently created German word expression for desoldering braid and the use of Entlötlitze is free for the public use to describe this desoldering technology/products.



### Why is it advantageous to remove solder using 3S-Wick®?



Wicking avoids damaging and life reducing heat shocks to components, printed circuit boards and surrounding components. Wicking also protects these parts against excessive temperatures of idling mechanical solder suckers.

3S-Wick® is made from high heat conductive copper and presents sufficient thermal mass per length to dampen heat shocks. Compare this to competing low thermal mass wicks!

The cold 3S-Wick® end is pressed with the hot soldering iron tip on solder to be absorbed. The cold wick and cold solder increase now gradually in temperature. There is no sudden temperature increase with large temperature gradients causing extreme thermal stress to the solder area. As wick and solder reach the melting temperature range of the solder, the solder liquifies and is almost instantaneously drawn by capillary forces into the wick, like ink into a blotter. Wick and tip should now be lifted simultaneously. The wick end with the absorbed solder is now cut off preparing a fresh wick end for the next de-solder operation.

3S-Wick® is made from high heat conductive copper with sufficient thermal mass and protects therefore against those "deadly" hot idling iron tip temperatures. The thermal mass of 3S-Wick® naturally cools the solder tip.

A too small solder tip compared to the 3S-Wick® size causes the tip temperature to considerably drop. The resulting temperature of the wick end, solder and tip might even fall under the melting point of the solder. Such a situation will not give a satisfactory desoldering operation.

If the temperature drops below the melting temperature then the temperature will rise only slowly by the heating power of the iron. The desoldering operates slowly, looks like freezing.

The size of tip therefore should be large enough to be able to store sufficient heat energy in its mass to bring upon contact the temperature of the wick and solder safely above the melting point of the solder. Correct wicking uses the stored heat in the tip for a speedy desoldering operation.

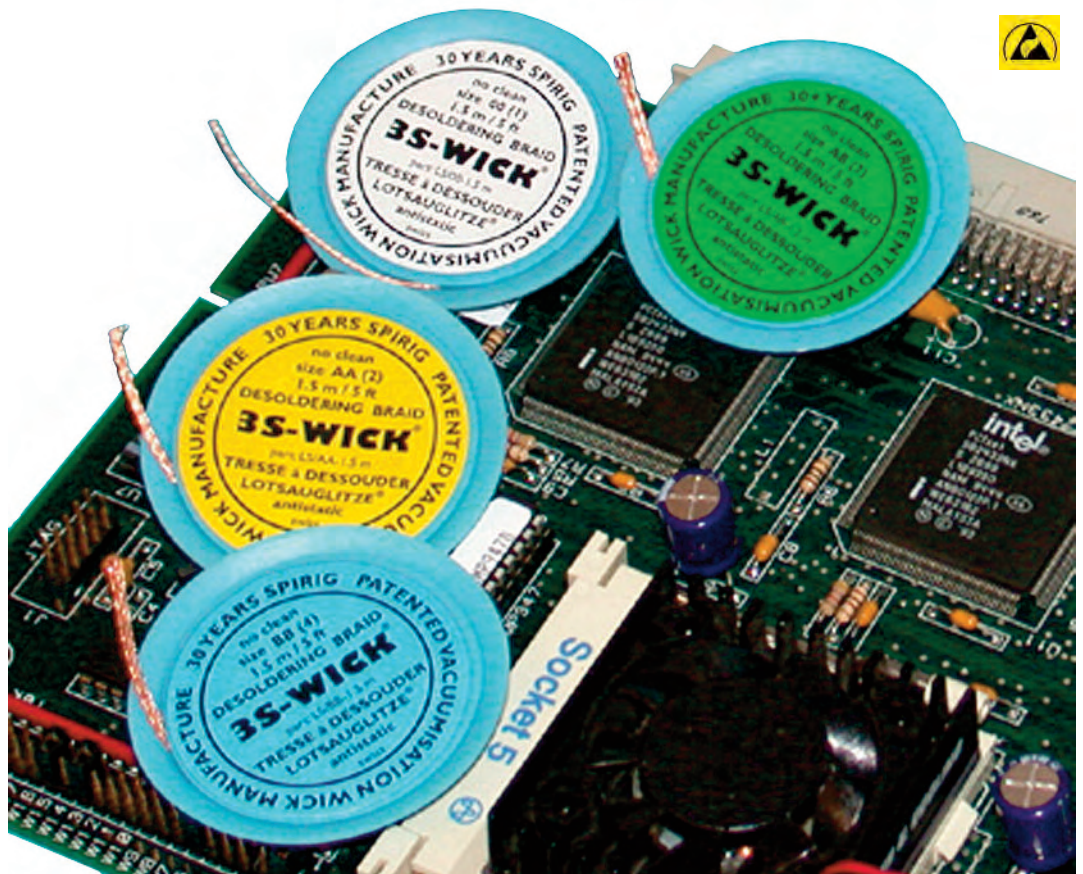
De-soldering by wicking means actually soldering the wick with the unwanted (to be removed) solder. The solderability of the wick is therefore a direct quality indicator for the wick itself.

Spirig's patented vacuumisation production process dries the wet flux coated braid structure under vacuum and without heating. Therefore eliminating rise of chemical activity and interactions of the coating with the copper surface. The solvents in the vacuum pump exhaust are recycled.

Ozone depleting substances do not escape into nature.

Minimal loss of expensive solvents is one of the reason for economic wick production costs.

Spirig's patented powder flux deposit production process does not use solvents at all. Costly solvents and recycling is avoided completely. This is the ultimate economic approach to braid processing. Ozone depleting substances do not exist at all in this patented flux coating process.



| Type | Colorcode | Width ca. | Length on spool | Part number. | Application      | Recommended Heat Power |
|------|-----------|-----------|-----------------|--------------|------------------|------------------------|
| 0    | white     | 0,80 mm   | 1.5 m           | LS/00-1.5m   | very fine joints | from 20 Watt           |
|      |           |           | 25 m            | LS/00-25m    |                  |                        |
| AA   | yellow    | 1,50 mm   | 1.5 m           | LS/AA-1.5m   | fine joints      | from 30 Watt           |
|      |           |           | 25 m            | LS/AA-25m    |                  |                        |
| AB   | green     | 2,20 mm   | 1.5 m           | LS/AB-1.5m   | medium joints    | from 50 Watt           |
|      |           |           | 20 m            | LS/AB-20m    |                  |                        |
| BB   | blue      | 2,70 mm   | 1.5 m           | LS/BB-1.5m   | large joints     | from 80 Watt           |
|      |           |           | 15 m            | LS/BB-15m    |                  |                        |

The blue spools are in Antistatic material

For best results, use a screw driver type soldering tip, the width of the tip shall fit to the width of the Desolder braid.

No-clean Flux compromises DIN EN 29 454 1.1.3

1.5m-Solder wicks are packed in boxes of 10 pieces.

## The pumps:



**Dish-pump  
One-Touch**



**Dish-pump, lockable,  
One Touch Take along**



**„Mushroom“-pump  
Pure Touch**



**„Mushroom“-pump, lock  
Pure Touch Take along**

This pump automatically allows the flow back of the media into the bottle, which prevents unnecessary evaporation of the liquid.

This pump prevents the flow-back into the bottle to avoid any pollution of the original content.

**Bottle volumes**

2 oz =60 mL, 4oz=120 mL, 6oz=180mL, 8oz=240 mL

\*) some bottles are available only in 1 or 2 sizes

**Bottle Materials:**

**HDPE** white (High density Polyethylen)

**Metal**

**Conductive:** black

**Durastatic static dissipative:** yellow, blue, orange, green

**Glas:** clear amber, various frosted colors

**Ceramics:** ask for our Beauty Special-catalog

**Imprint:**

Acetone, IPA, Flux Remover, Isopropanol, DI Water  
(as far as available individually)

**Combinations and  
availability:**

ask for quote of specific quantity and availability,

**Special editions:**

e.g. goldplated pumps are custom-made



**Info:** The locking mechanism is ideal for transport of the Menda pump in service bags and for increased work place safety to avoid unwanted spilling.





**Mushroom-pump,  
Bottle HDPE white, 180 mL  
Part number 35508**

**Dish-pump,  
Bottle HDPE white, 180 mL  
Part number 3316 or 35509**

**Dish-pump, locking  
Bottle HDPE white, 180 mL  
Part number 35703**

**Mushroom-pump, locking  
Bottle HDPE white, 180 mL  
Part number 35805**



**Mushroom-pump,  
Bottle Durastatic yellow, 120 mL  
Part number 35559**

**Dish-pump, locking  
Bottle Durastatic yellow, 120 mL  
Part number 35360-L**

**Dish-pump,  
Bottle Durastatic yellow, 120 mL  
Part number 35360**



**Dish-pump, locking  
Bottle Durastatic blue, 180 mL  
Part number 35559**

**Dish-pump,  
Bottle Durastatic blue, 180 mL  
Part number 35283**

**Mushroom-pump,  
Bottle Durastatic blue, 180 mL  
Part number 35285**



**Dish-pump, locking  
Bottle Durastatic yellow, 180 mL  
Part number 35276-L**

**Dish-pump,  
Bottle Durastatic yellow, 180 mL  
Part number 35276**

**Mushroom-pump,  
Bottle Durastatic yellow, 180 mL  
Part number 35276-P**



**Mushroom-pump,  
Bottle Metal, 120 mL  
Part number 35335-P**

**Mushroom-pump, locking  
Bottle Metal, 120 mL  
Part number 35255**

**Dish-pump, locking  
Bottle Metal, 120 mL  
Part number 35256**

**Dish-pump,  
Bottle Metal, 120 mL  
Part number 35335**

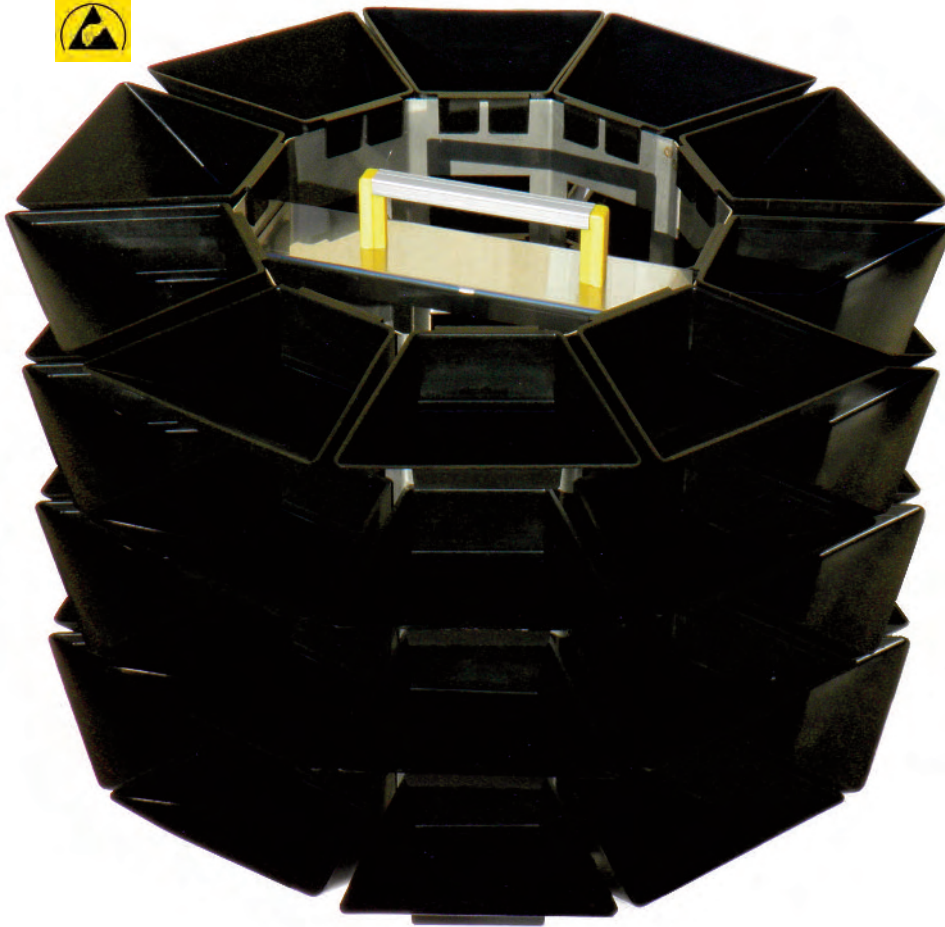


**Limited Edition**  
as long as stock lasts, e.g.

**Dish-pump gold plated,  
frosted blue glass, 180 mL  
Part number 35339**

**Ask for your very individual  
Menda Dispenser Pump  
& Bottle !**

## The Types:

**CARO 01 - ESD**

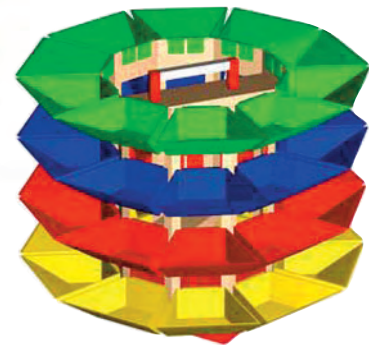
A very versatile and easy to rotate helper for all day use.

Solid mechanical construction ensures a very long life.

Comfortable handle to change from one to another workstation.

Solid base for a stable stand.

2 Version: colored tool-version or in ESD, static conductive for sensible Antistatic workplaces.

**CARO 02****CARO 01 - ESD****Description:**

- Metal frame Stainless Optics, ESD
- 4 Levels
- 40 bins, conductive Thermoplast color: black
- Handle for carrying
- base-stand
- zink plated grounding Connection
- Weight: 4,8 kg

**Dimensions:**

Carousell:  
Width (with bins): 460 mm, Height 400 mm

Bin dimensions:  
Height 40 mm  
length 106 mm  
width 70 – 130 mm

**CARO 02**

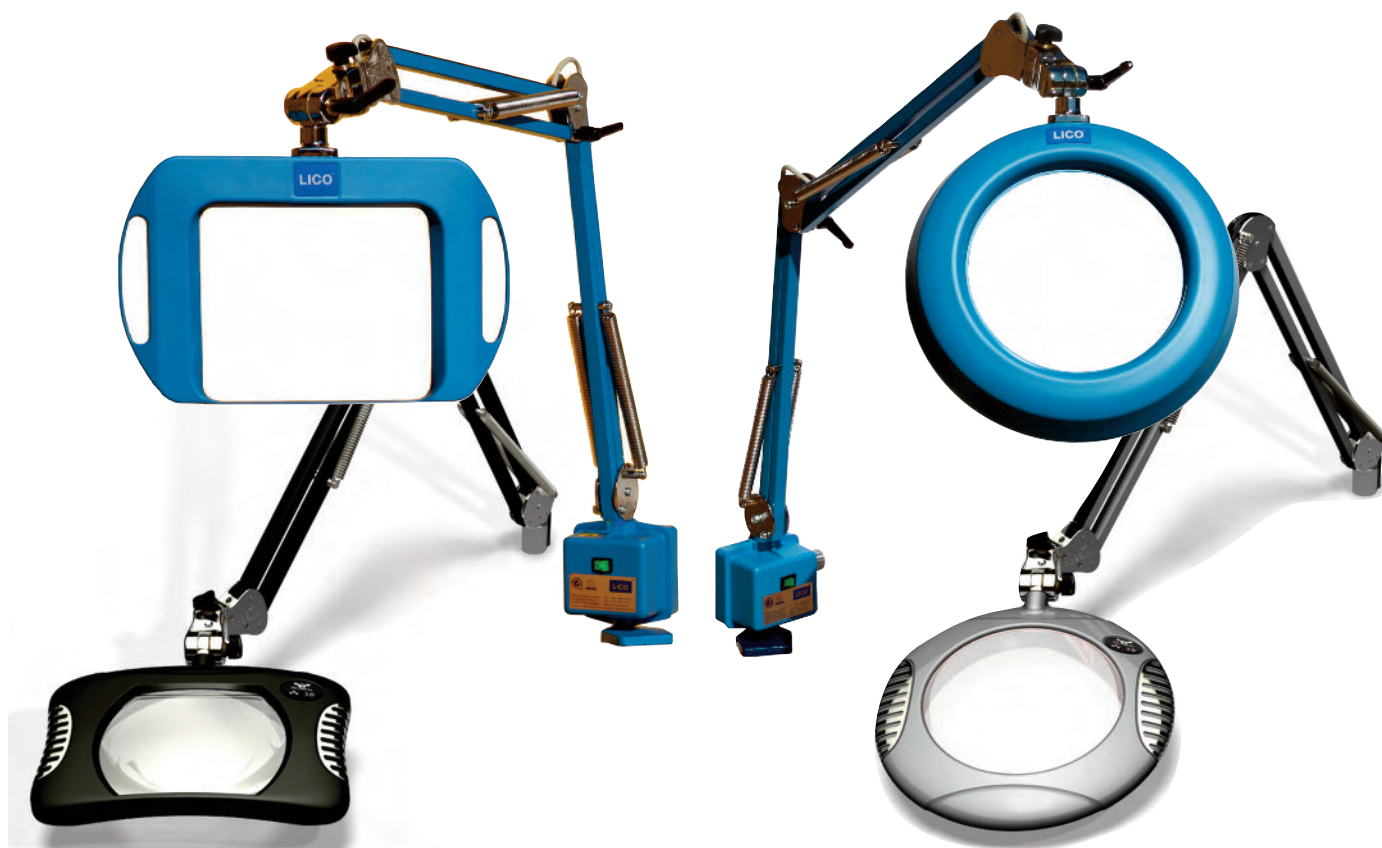
- Metal frame white painted
- 4 Levels
- 40 bins, Thermoplast in 4 colors green, blue, grey, red
- Handle for carrying
- base stand
- Weight: 4,8 kg

Carousell:  
Width (with bins): 460 mm, Height 400 mm

Bin dimensions:  
Height 40 mm  
length 106 mm  
width 70 – 130 mm



# INSPECT SIMPLY BETTER



# THE END OF EYESTRAIN & REJECT

We have the right magnifier to improve your inspection yield.

**LICO**

LICO Electronics GmbH, A-2320 Kledering  
LICO Hungaria Kft, H-2030 Erd  
LICO Mecatronic, RO-540526 Targu-Mures  
+43 1 706 43 00 office@lico.at



Your personal Distributor: