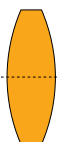




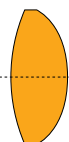
Magnifiers and reading glasses

Lens systems



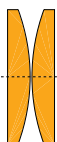
Biconvex lens system

Biconvex lens system lenses are lenses with two convex surfaces. It is the simplest and most commonly used lens shape for magnifiers. In contrast to biconvex lenses, plano-convex lenses have one convex and one flat surface. Plano-convex lenses are used in aplanatic lens systems. (See aplanatic lens system).



Aspheric lens system

The surfaces of a spherical lens correspond to a section of the surface of a sphere. In contrast, aspheric lenses deviate from this spherical shape. Comparatively higher magnifications can be achieved using aspheric lenses as the defects that inevitably occur in any image produced by lenses are minimised.



Aplanatic lens system

Aplanatic lens systems consist of 2 plano-convex lenses, where the convex sides face each other internally. This allows a larger field of vision with sharp edges at a relatively high magnification.



Achromatic lens system

Achromatic lens systems consist of at least 2 cemented lenses. The facing sides must have the identical opposite curvature. The lenses consist of crown and flint glass. Achromatic lenses deliver transparent images to the edge of the visual field, even for high-contrast objects.

Folding pocket magnifiers

Application:

For magnifying small objects

Execution:

- No. 41100: Glass lens in plastic frame
- No. 41120: Glass lens in metal holder
- Nickel-plated brass cover panels

- No. 41125: Glass lens in plastic holder
- Nickel-plated brass cover panels
- No. 41130: Dust-proof plastic housing

Advantage:

- No. 41130: Precision magnifying glass for pin-sharp images free from chromatic aberration



No. 41100



No. 41120



No. 41125



No. 41130

		Magnification	Lens Ø (mm)	Lens design	Lens material	Ident. No.	
ORION	41100...	3,5-times	55	Biconvex	Glass	Ident. No.	011
ORION	41120...	6-times	23	Aplanatic	Glass	Price/unit, €	•
ORION	41120...	8-times	23	Aplanatic	Glass	Ident. No.	011
ORION	41120...	10-times	23	Aplanatic	Glass	Price/unit, €	•
ORION	41120...	15-times	18	Aplanatic	Glass	Ident. No.	021
ORION	41120...	20-times	18	Aplanatic	Glass	Price/unit, €	•
ATORN	41125...	3/6/9-times	30	Biconvex	Glass	Ident. No.	031
ESCHENBACH	41130...	3/6/9-times	23	Achromatic	Glass	Price/unit, €	•
						Ident. No.	051
						Price/unit, €	•
						Ident. No.	061
						Price/unit, €	•
						Ident. No.	011
						Price/unit, €	•
						Ident. No.	010
						Price/unit, €	•

ESCHENBACH = Prod. Gr. 4AA

ORION = Prod. Gr. 454

ATORN = Prod. Gr. 490

ATORN® Magnifying glass

Application:

For magnifying small objects, e.g. for quality control during production.

- Round aluminium handle with recessed grips

Execution:

- Nickel-plated brass frame

Technical data:

- Magnification: 2,5-times
- Lens diameter: 75 mm
- Lens design: Biconvex



41140...

Ident. No.
Price/unit, €

025

Prod. Gr. 490

ESCHENBACH Magnifying glass

Application:

For magnifying small objects, e.g. for quality control during production.

Execution:

- Ergonomic, black plastic handle

Magnification		2,9-times	3,8-times
Lens Ø (mm)		75	60
Ident. No.		011	021
Price/unit, €		•	•

Prod. Gr. 4AA

Technical data:

- Lens design: Aplanatic
- Lens material: Plastic light lens



ATORN® Handheld magnifier

Application:

For magnifying especially small objects, e.g. for quality control during production.

Execution:

- Black anodised aluminium mount and handle

Technical data:

- Lens design: Aplanatic



Magnification		4-times	5-times	8-times	10-times	15-times
Lens Ø (mm)		50	40	30	23	23
Ident. No.		104	105	108	110	115
Price/unit, €		•	•	•	•	•

Prod. Gr. 490

ESCHENBACH Pocket magnifier lamp

EASY-POCKET

Application:

For magnifying small parts with additional light source.

Execution:

- illumination: bright, ultra-flat SMD LEDs
- flat, lightweight design
- Bright LED lighting when lens is extended
- LED light switches on automatically when lens is fully extracted

Delivery:

With batteries

Technical data:

- Magnification: 4-times
- Lens design: Aspherical
- Lens material: Plastic light lens with scratchproof cera-tec® hard coating



41570...

easyPOCKET

Ident. No.
Price/unit, €

010

Prod. Gr. 4AA

ESCHENBACH Pocket magnifier lamps

mobilux LED

Application:

For magnifying small parts with additional light source.

Execution:

- Illuminated by SMD LED
- Large, user-friendly switch
- Lanyard eyelet

Advantage:

- Long LED service life: approx. 50,000 hours
- Step-up converter for voltage control (for brighter, consistent lighting over a longer period than other LED pocket magnifying lamps without step-up converters)

- Collimating lens for bright, homogeneous illumination

- 3 attachable filters (white, yellow, orange) – various colour temperatures

Delivery:

including batteries (2 x Mignon 1.5 V, type AA), case for optimum lens protection

Technical data:

- Lens design: Aspherical
- Lens material: Plastic light lens with scratchproof cera-tec® hard coating



Ident. No. 011, 021-041



Ident. No. 016

Magnifying lenses and technical endoscopy \ Magnifying glasses

Magnification		4-times	4-times	7-times	10-times	12,5-times
Lens Ø (mm)		60	-	35	35	35
41541...	Ident. No. Price/unit, €	011	016	021	031	041

Prod. Gr. 4AA

ESCHENBACH LED magnifying lamp

Powerlux

Application:

For magnifying small parts with additional light source.

- Large field of vision
- Consistently bright and dazzle-free illumination

Execution:

- Illuminated by 2 SMD LEDs opposite each other
- Bright light, approx. 8000 K for true-colour images
- Automatic switch-off after 30 min.

Delivery:

Protective hard foam case and batteries (3 x 1.5 V AA)

Advantage:

- Compact design for simple, intuitive movement over the reading material

Technical data:

- Lens diameter: 58 mm
- Lens design: Aspherical
- Lens material: Plastic light lens with scratchproof cera-tec® hard coating



Magnification		3,5-times	5-times	7-times
41541...	Ident. No. Price/unit, €	095	100	105

Prod. Gr. 4AA

ESCHENBACH Large-area magnifier

VisoLux®

Application:

For checking surfaces and small parts

- Ergonomic, view-friendly lens angle
- Integrated additional orange filter

Execution:

- Two different colour temperatures for dazzle-free inspection of glossy parts
- Automatic switch-off after 30 minutes
- Illuminated by 2 SMD LEDs

Delivery:

in hard foam case

Technical data:

- Magnification: 3-times
- Lens dimensions: 75 x 100 mm
- Lens material: Plastic light lens with scratchproof cera-tec® hard coating

Advantage:

- Unique, large visual field



41541...	Ident. No. Price/unit, €	150
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Prod. Gr. 4AA

ATORN® Magnifying glass on stand

Application:

For magnifying small objects, e.g. for quality control during production.

Execution:

- Flexible, metal gooseneck arm 300 mm long
- Heavy table-top base 110 mm diameter

Technical data:

- Magnification: 2-times
- Lens diameter: 75 mm
- Lens design: Aplanatic
- Version: Swan neck with table leg

41240...	Ident. No. Price/unit, €	040
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Prod. Gr. 490



ATORN® Magnifying glass on stand LED lighting

Application:

For magnifying small objects, e.g. for quality control during production.

Execution:

- Aluminium magnifier head
- Flexible gooseneck
- Heavy base
- Half-frame lens mount for viewing without disturbing edges

Advantage:

- Bright light with 5 power LEDs

- Low power consumption (5 V mains plug)
- Practically unlimited LED service life
- Wide field glass lens for sharp images up to the edge

Technical data:

- Magnification: 2-times
- Lens diameter: 120 mm
- Lens design: Biconvex
- Lens material: Glass
- Version: Swan neck with table leg



41331...

Ident. No.	100
Price/unit, €	●

Prod. Gr. 490

ORION® LED magnifying lamp Flex arm

Application:

For magnifying small parts with additional light source.

Execution:

- Illuminated by 60 LEDs
- Mounted with table clamp
- Gooseneck stand
- Flexible arm length 50 cm

Advantage:

- Very large visual field
- Maintenance-free with long-lasting LEDs

- Ergonomic handle for easy adjustment of flexible arm

Delivery:

Lamp, including power pack and table clamp, 65 mm

Technical data:

- Magnification: 1,75-times
- Lens diameter: 170 mm
- Lens design: Biconvex
- Lens material: Glass
- Version: Swan neck with table clamp



41330...

Ident. No.	020
Price/unit, €	●

Prod. Gr. 454

ATORN® LED magnifying lamp

Application:

For magnifying small parts with additional light source.

Execution:

- Bright illumination with 90 ultra bright SMD LEDs
- Segmented LED switching in 2 stages
- Non-slip, well-designed, soft plastic ring for impact protection
- 6500 K colour temperature (daylight)

Advantage:

- Extremely low power consumption (only approx. 9 watts)

- Metal arm with plastic cover, no danger of pinching
- Long LED service life, no risk of breakage
- External switch for use as a table lamp
- High-quality lens

Delivery:

Magnifying lamp, 65 mm table clamp and instructions

Technical data:

- Lens diameter: 127 mm
- Lens design: Biconvex
- Lens material: Glass
- Version: Articulated arm with table clamp



Magnification		1,75-times	2,25-times
41333...	Ident. No. Price/unit, €	035 ●	055 ●

Prod. Gr. 490

ORION® Magnifier ring lamp

Application:

For magnifying small parts with additional light source.

Execution:

- Fluorescent tube 22 W
- Reach 900 mm
- Spring balance allows it to be clamped in any position

- Mains connection 230 V, 50 Hz

Technical data:

- Magnification: 1,75-times
- Lens diameter: 120 mm
- Lens design: Biconvex
- Lens material: Glass
- Version: Articulated arm with table clamp



41330...

Ident. No.	010
Price/unit, €	●

Prod. Gr. 454

ESCHENBACH LED ring magnifier lamp

varioLED

Application:

For magnifying small parts with additional light source.

Execution:

- Illuminated by 84 LEDs
- 6 joints can be firmly clamped in any position
- Adjustable ring lighting and segment control
- Folding and detachable lens cover
- Mains supply 100 V-240 V, 50-60 Hz

- Dimmable LEDs - individual light intensity for any work area
- Clamping range of table clamp 18 mm to 74 mm

Technical data:

- Magnification: 2-times
- Lens diameter: 132 mm
- Lens design: Aspherical
- Lens material: Plastic light lens with scratchproof cera-tec® hard coating
- Version: Articulated arm with table clamp



41338...

Ident. No.
Price/unit, €

011

Prod. Gr. 4AA

Waldmann LED magnifying lamp

TEVISIO

Application:

For magnifying small parts with additional light source.

Execution:

- Illuminated by 48 SMD LEDs
- Power consumption: 14 W at 6000 lx
- Power supply unit, 100-240 V, 50/60 Hz, 3.5 m connection cable
- Integrated membrane key for ON/OFF, dimming or visualiser function
- Ident. No. 100, 120: Degree of protection IP 20, protection class 2
- Ident. No. 110, 130:
 - IP 20 degree of protection, protection class 2
 - Glued-on additional lens providing approx. 3x magnification

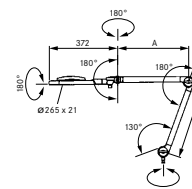
- 6 pivots and balanced linkage for precise adjustment
- Light adjustable to 10% intensity
- Ident. No. 100, 120: Large visual field for optimum view, mobile 3D head joint for large operating range
- Ident. No. 110, 130: Large visual field for optimum view, movable 3D head joint for large operating range

Delivery:

- Ident. No. 100, 120: Incl. bulbs
- Ident. No. 110, 130: Incl. lamps

Technical data:

- Magnification: 2-times
- Lens diameter: 153 mm
- Lens design: Biconvex
- Lens material: Glass
- Version: Articulated arm with screw-on plate



Ident. No. 100, 120

Model		RLLQ 48 R	RLLQ 48/2 R	RLLQ 48 R	RLLQ 48/2 R
A/B (mm)		484/500	484/500	384/400	384/400
41335...	Ident. No. Price/unit, €	100 ●	110 ●	120 ●	130 ●

Prod. Gr. 4AB

ESCHENBACH Magnifying glasses

MaxDetail

Application:

For magnifying small parts whilst working with both hands.

Execution:

- ± 3 dpt diopter adjustment

Advantage:

- Very light

- Large visual field (approx. 150 mm at distance of 400 mm)

Delivery:

- in hard foam case

Technical data:

- Magnification: 2-times
- Working distance: 400 mm
- Lens material: Plastic light lens



41185...

Ident. No.
Price/unit, €

011

Prod. Gr. 4AA

ESCHENBACH Headlight LED

For attaching to spectacles

Application:
For pinpoint illumination of components

Execution:

- Range: vertical illuminance: approx. 3200 lx at 250 mm, approx. 1200 lx at 400 mm
- Cable length: 1 m

- Bulb housing: 32 x 20 x 34 mm
- Illumination with 2 strong LEDs

Advantage:

- A clip easily attaches the headlight LED to spectacles. It can also be used on a support by non-spectacle wearers.
- For pinpoint illumination



41185...

Ident. No.
Price/unit, €

100

Prod. Gr. 4AA

ESCHENBACH Headband magnifying glasses

Application:
For magnifying small parts whilst working with both hands.

Execution:

- High quality plastic design
- plano-convex PXM lightweight lens

- Closed shade protects against scattered light
- Suitable for spectacle wearers
- Height adjustment with latching function

Technical data:

- Lens design: Binoculars



Magnification		3-times	2-times
Working distance (mm)		130	250
41190...	Ident. No.	010	020
	Price/unit, €	•	•

Prod. Gr. 4AA

ORION® Mini stand magnifier

Application:
For visual inspection of surfaces, edge sharpness etc.

Execution:

- Biconvex silicate glass lens
- Brass housing, chrome-plated
- Folding

Advantage:

- Folded out magnifier: exact vertical distance from viewed surface
- Folded magnifier: slim and compact design
- Absolutely steady, sharp image when placed over object

Technical data:

- Lens design: Biconvex



Magnification		5-times	8-times	10-times
Lens Ø (mm)		31.5	17.5	14.5
Height (mm)		53	33	27
41528...	Ident. No.	051	081	101
	Price/unit, €	•	•	•

Prod. Gr. 454

ATORN® Measuring magnifying glass

Full metal design and interchangeable dial plates

Application:
For measuring surfaces in workshops, laboratories, quality assurance, e.g. measuring indentations during Brinell hardness test

Execution:

- Parallax-free, distortion-free reading

Advantage:

- Half-open tube with white background for optimum, glare-free illumination of objects

- Brass dial, chrome-plated, high-precision laser graduated
- Superb edge sharpness for near parallax-free viewing

Technical data:

- Scale value: 0.1 mm
- Lens design: Achromatic
- Lens material: Glass



Magnification		6-times	8-times	10-times
Max. length measuring range (mm)		20	10	10
41540...	Ident. No.	055	105	205
	Price/unit, €	•	•	•

Prod. Gr. 490

ORION® Measuring magnifying glass

Full metal design

Application:

For measuring surfaces in workshops, laboratories, quality assurance, e.g. measuring indentations during Brinell hardness test

- INOX steel scale, black engraved divisions

Technical data:

- Lens design: Aplanatic
- Lens material: Glass

Execution:

- Parallax-free, distortion-free reading

Magnification		6-times	8-times	10-times	12-times
Max. length measuring range (mm)		20	10	10	6
Scale value (mm)		0.1	0.1	0.1	0.05
41535...	Ident. No.	060	080	100	120
	Price/unit, €	•	•	•	•

Prod. Gr. 454



ESCHENBACH Measuring magnifying glass

Replaceable reticule plate

Application:

For measuring on flat surfaces, e.g. small hole diameters, paint damage etc.

Delivery:

Replaceable reticule plate, type 01, with case

Execution:

- Focus using focussing ring
- Measuring range 10 mm
- Reticule plate 01

Technical data:

- Max. length measuring range: 20 mm
- Scale value: 0.1 mm
- Lens design: Achromatic
- Lens material: Glass

Magnification		7-times	10-times
41560...	Ident. No.	110	120
	Price/unit, €	•	•

Prod. Gr. 4AA



ESCHENBACH Measuring magnifying glass

LED light

Application:

For measuring on flat surfaces, e.g. small hole diameters, paint damage etc.

- Almost unlimited service life

Delivery:

Without batteries (2 x 1.5 V, type C)

Execution:

- Replaceable reticule plate

Advantage:

- Very bright, shadow-free light
- Power consumption approx. 10% compared to traditional lighting

Technical data:

- Magnification: 10-times
- Max. length measuring range: 20 mm
- Scale value: 0.1 mm
- Lens design: Aspherical
- Lens material: Glass

41562...	Ident. No.	010
	Price/unit, €	•

Prod. Gr. 4AA



Calibration on request.

ESCHENBACH Micromagnifiers

Application:

For surface inspection of all materials

Delivery:

Batteries (2x 1.5 V AA)

Execution:

- Optional illumination
- Black plastic housing
- Focus using rotary ring

Technical data:

- Magnification: 30-times
- Material: Plastic

41548...	Ident. No.	010
	Price/unit, €	•

Prod. Gr. 4AA



ATORN® measuring microscopes

Application:

For general measuring tasks in linear measurement technology, graphics industry or hardness test for Brinell and Vickers.

- Robust light metal housing
- Focussing using threaded channels in lens and eyepiece

Delivery:

In transport case, with LED illumination, batteries (4x button cells 1.5 V type LR44)

Execution:

- Attached LED lighting (battery-powered)

	Magnification	Max. length measuring range (mm)	Scale value (mm)	Object field Ø (mm)	Working distance (mm)	Ident. No.	
41550...	20-times	7	0.05	8	57	Price/unit, €	020
							•
41552...	40-times	4	0.02	5	36	Price/unit, €	020
							•



No. 41550

	Magnification	Max. length measuring range (mm)	Scale value (mm)	Object field Ø (mm)	Working distance (mm)	Ident. No.	Price/unit, €
41556...	60-times	2	0.0125	2.5	26	020	●

Prod. Gr. 490

RIDGID Digital inspection camera

micro CA-25™

Application:

For detailed visual inspections at short range.

Execution:

- 2.4" colour LCD display with 480 x 234 pixel resolution
- Aluminium camera head with ultra-bright LED illumination
- Flexible camera cable waterproof to 3 m

Advantage:

- Live images transmitted to external device via video output
- Digital 180° screen rotation for upright image display

Delivery:

micro CA-25™, camera head 17 mm with 0.9 m, RCA/cinch cable, attachable tools: mirror, hook and magnet, 4x 1.5 V AA batteries, transport case

Technical data:

- Model: micro CA-25
- Image rotation: 360° (2 x 180°)
- Field of vision: 72 Degree
- Screen size: 2.4 in
- External memory on SD card: Up to 32 GB
- Camera head diameter: 17 mm
- Number of LEDs: 4 PCS
- Cable length: 0.9 m
- Camera cable, extending: No
- Speech recording: No
- Image, video and audio recording: No
- Video output: PAL



41500...	Ident. No.	025
	Price/unit, €	●

Prod. Gr. 412

RIDGID Digital inspection camera

micro CA-150™

Application:

For detailed visual inspections in hard-to-reach spots.

Execution:

- 3.5" colour LCD display with 320 x 240 pixel resolution
- aluminium camera head with ultra-bright LED illumination
- Flexible camera cable (waterproof camera head and cable)
- Internal memory of up to 20 images

Advantage:

- Camera cable extendable up to 9 m using extensions
- live images transmitted to external device via video output

- Digital 4x 90° screen rotation for upright image display

Notes:

Saved images cannot be read out

Technical data:

- Model: micro CA-150
- Image rotation: 360° (4 x 90°)
- Field of vision: 72 Degree
- Screen size: 3.5 in
- Internal memory: No
- External memory on SD card: No
- Camera head diameter: 17 mm
- Number of LEDs: 4 PCS
- Cable length: 0.9 m
- Camera cable, extending: Yes
- Speech recording: No
- Image, video and audio recording: No
- Video output: PAL | NTSC



41500...	Ident. No.	050
	Price/unit, €	●

Prod. Gr. 412

RIDGID digital inspection camera
micro CA-330™ and micro CA-350™

Application:
For detailed visual inspections in hard-to-reach spots.

- Execution:**
- 3.5" colour LCD display with 320 x 240 pixel resolution
 - aluminium camera head with ultra-bright LED illumination
 - Flexible camera cable (waterproof camera head and cable)
 - Audio recorder with integrated loudspeaker
 - data transfer via WiFi
 - images JPG: 640x480 pixels, video MP4: 320x240 pixels
 - can be operated with 3.7 V li-ion batteries or using a mains plug
 - incl. memory card 4 GB – expandable to 32 GB
 - FREE RIDGID VIEW app for iOS™ and Android™

- Advantage:**
- Camera cable extendable up to 9 m using extensions
 - digital 4x 90° screen rotation for upright image display
 - transfer of pictures and videos via WiFi to a connected smartphone or tablet
 - wireless recording of audio commentary during video inspections with a Bluetooth™ headset.

Notes:
Bluetooth headset not included in scope of delivery

- Technical data:**
- Model: micro CA-330
 - Data transmission type: WLAN/Bluetooth
 - Image rotation: 360° (4 x 90°)
 - Field of vision: 72 Degree
 - Screen size: 3.5 in
 - Internal memory: 235MB
 - External memory on SD card: Up to 32 GB
 - Camera head diameter: 17 mm
 - Number of LEDs: 4 PCS
 - Cable length: 0.9 m
 - Camera cable, extending: Yes
 - Speech recording: Yes
 - Image, video and audio recording: Image: 640 x 480 (jpg)/video: 320 x 240 (MP4)
 - Video output: PAL | NTSC



41500...

Prod. Gr. 412

Ident. No.
Price/unit, €

102