EN

Catalogue BR 2023-1

Eye Protection Glasses and Visors

In Medicinal Radiation Application

MAVIG

As an independent researcher and manufacturer, MAVIG has been successful across the globe since 1921.
MAVIG products stand for quality and reliability.

We set international standards with our intelligent solutions for the medical industry.
Our products are manufactured with the latest technology and processes at the company's location in Munich, Germany.

The recognition from our customers is both an affirmation and motivation to continue to invest our energy and competence in further research and the development for innovative solutions in the medical field.

BR/BRV

QUALITY SIGNED AND SEALED. FOR 100 YEARS IN THE FIELD OF WORKPLACE SAFETY

MAVIG is compliant in accordance with the applicable European Standards:

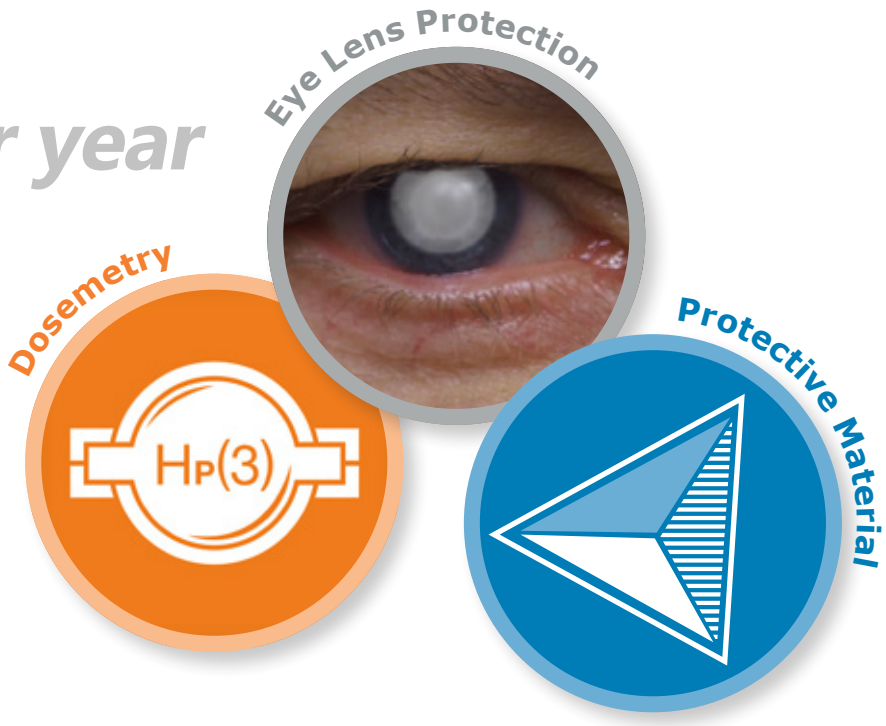
- ISO 13485 (Quality management system for medical devices)
- (EU) 2017/745 (MDR - Medical Device Regulation)
- (EU) 2016/425 (PPE regulation)

(see also: ***www.mavig.com/products/x-ray-protection/eyeprotection/*** *at the end of the web page - lower area „Downloads")*

<20 mSv per year

„According to today's knowledge, early stages of radiation-induced cataracts can occur already from a radiation exposure level of 0.5 Gy." [1) 2)]

„Regardless of whether the dose occurs acutely or over an extended period, the effect is cumulative, single doses accumulate." [1)]



The statutory annual dose limit value for eye lenses is 20 mSv (millisievert) for people older than 18 years who are occupationally exposed to radiation.

By default and taking into account the level of science and technology, radiation exposure is even below this limit to be kept as low as reasonably achievable.

§ *With implementation of the European EURATOM Directive 2013/59 in national legislation from February 6, 2018 and a new radiation protection law (introduced October 1, 2017) the annual value for the eye lens dose is limited for the first time at a mandatory threshold of max. 20 mSv per year (for people older than 18 years).*

Trielle – MAVIG's protective material for frame/structure and lateral protection zones (model dependend usage). To protect an even larger area from scattered radiation, MAVIG uses for the models BR130, BR126, and BR124 an especially for X-ray protective glasses designed synthetic material and thus significantly extends the shielding range.

The MAVIG glasses models BR130 and BR330 allow the **optional use of dosemeters** due to the patented dosemeter connection on the left, right or on both sides (model dependent). The dosemeter connection has been designed in such a way that there are no user restrictions and yet the best possible dosemetry is guaranteed.

Sources of supply depending on function and country assignment

With dosemeter connection

- In **Germany**: You can obtain the radiation protection glasses with dosemeter connection by the dosemetry services (AWST, formerly Evaluation Centre of the Helmholtz Centre) of Mirion Technologies (AWST) GmbH (*www.auswertungsstelle.de*) and through the industry and trade. Compatible dosemeters and the dosemetry service are provided by the Dosimetrie (AWST) of the Mirion Technologies GmbH
- In **France, Belgium and Switzerland**: Radiation protection glasses with dosemetry connection, compatible dosemeters and the dosemetry service are available from Dosilab AG (*www.dosilab.ch*).
- If the glasses are needed in **other countries**, please contact MAVIG GmbH or Dosilab AG directly. (*Dosilab AG – Phone: +41 (0) 31 744 92 00, Fax: +41 31 744 92 90, e-mail: info@dosilab.ch*)

1) SSK: *Radiation-induced cataracts, recommendation of the Radiation Protection Commission with scientific justification* [conference].- Bonn, May 14th, 2009. - 234th edition Session of the Radiation Protection Commission on May 14th, 2009. - P. 9, 18, 21

2) Radiological Protection Ordinance: *Ordinance on protection against damage caused by ionising radiation* [Ordinance]. - October 2011 - P. 31, 32, 34

BR126

A new definition of X-ray protection for the eye lenses

The BR126 glasses are designed to best protect the user's eyes from scattered radiation from all angles of incidence.

- **NEW:** X-ray protective side panels made of a leadfree material compound „Trielle"
- Patented formula, lead equivalent value of 0.50 mmPb
- Compliant according to IEC 61331-1:2014

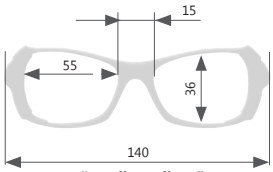
Special Quality Features
Optimise the Use in the Medical Field

- Materials used ensure the greatest possible freedom from allergies
- Shape and material support the avoidance of injury risks
- Easy cleaning and very good resistance to chemical influences (resistance to disinfectants)

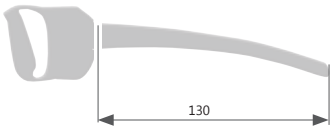
BR126 X-ray protective glasses with a large-area radiation protection glazing and two, close to the front lenses, subsequent lateral X-ray protection zones

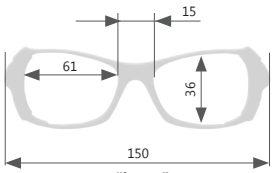
Colour designs	Sandstone/Orange / Cocoa/Light Blue /
Sizes	"small-medium" and "large"
Lead equivalent value	Front protection (50 - 150 kV) 0.50 mm Pb *or* Front protection (50 - 150 kV) 0.75 mm Pb Side protection (50 - 150 kV) 0.50 mm Pb
Weight	ca. 80 g (0.50 mm Pb) ca. 85 g (0.75 mm Pb)
Extra	**Anti-reflective coating of the lenses** Glasses strap, case, cloth
Conformity	IEC 61331-1:2014 / IEC 61331-3:2014

Optical corrections *Single, bifocal and progressive lenses are feasable*



"small-medium"





"large"

BR124

X-ray protective glasses with lateral protection, flush to the front lenses

The BR124 glasses are designed to best protect the user's eyes from scattered radiation from all angles of incidence.

- **NEW:** X-ray protective side panels made of a leadfree material compound „Trielle"
- Patented formula, lead equivalent value of 0.50 mmPb
- Compliant according to IEC 61331-1:2014

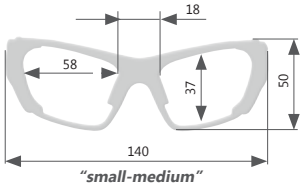
Special Quality Features
Optimise the Use in the Medical Field

- The nose pads are flexibly adjustable for an ergonomic and individual fit
- Materials used ensure the greatest possible freedom from allergies
- Shape and material support the avoidance of injury risks
- Easy cleaning and very good resistance to chemical influences (resistance to disinfectants)

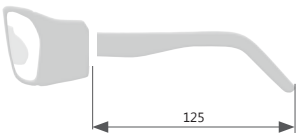
BR124 X-ray protective glasses with a large-area radiation protection glazing and lateral X-ray protection, flush to the front lenses

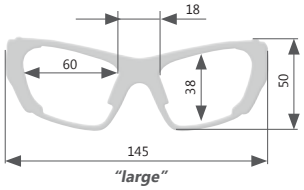
Colour designs	Rosewood Alcedo Blue Onyx Black
Sizes	"small-medium" and "large"
Lead equivalent value	Front protection (50 - 150 kV) 0.50 mm Pb *or* Front protection (50 - 150 kV) 0.75 mm Pb Side protection (50 - 150 kV) 0.50 mm Pb
Weight	ca. 80 g (0.50 mm Pb) ca. 85 g (0.75 mm Pb)
Extras	**Anti-reflective coating of the lenses** Glasses strap, case, cloth
Conformity	IEC 61331-1:2014 / IEC 61331-3:2014

Optical corrections *Single and progressive lenses are feasable*



"small-medium"





"large"

BR130

X-ray protective glasses with continuous radiation protection and dosemetry option

Die BR130 – Comprehensive shielding for the eyes against scattered radiation through X-ray protective glasses and eye frame plus lateral protection

Constructively, this model breaks new ground. Large-area X-ray protective glazing complemented by a full eye frame with integrated lateral protection made of our protective material „Trielle“.

In total, this results in comprehensive radiation protection up to the temples, including a tight seal to the cheekbones.

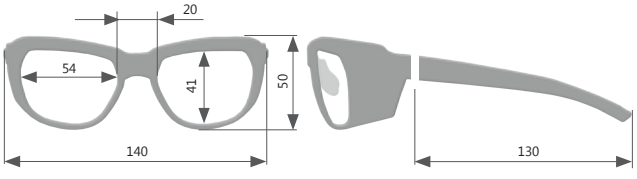
Special Quality Features
Optimise the Use in the Medical Field

- The nose pads are flexibly adjustable for an ergonomic and individual fit
- Materials used ensure the greatest possible freedom from allergies
- Shape and material support the avoidance of injury risks
- Easy cleaning and very good resistance to chemical influences (resistance to disinfectants)

BR130 X-ray protective glasses with continuous radiation protection – nose to temple, available with or without integrated, patented dosemetry conncetion

Colour designs	Shiny Onyx/Graphit / Shiny Onyx/Bordeaux / Glacier White/Graphit / Glacier White/Bordeaux /
Size	Universal/adjustable
Lead equivalent value	Front protection (50 - 150 kV) 0.50 mm Pb *or* Front protection (50 - 150 kV) 0.75 mm Pb Side protection (50 - 150 kV) 0.50 mm Pb
Weight	ca. 95 g (0.50 mm Pb) / 107 g (0.75 mm Pb)
Dosemetry connection*	Without or both sides (*dosemetry option available exclusively in the colour design Shiny Onyx/Graphit*)
Extra	**Anti-reflective coating of the lenses** Glasses strap, case, cloth
Conformity	IEC 61331-1:2014 / IEC 61331-3:2014

** Dosemeters and dosemetry services are not included in the delivery. For the purchase of compatible dosemeters, as well as the dosemetry service, please refer to the instructions on page 3.*



The BR130 is the consistent further development of optimal X-ray safety glasses.

Eyes are one of the most radiation sensitive organs of the body. Therefore, it is essential to wear suitable X-ray protective glasses at radiological workplaces.

With the BR130 model, not only the material of the lenses is protective. The entire eye frame, with the adjoining lateral protective zones, is made of the patented, lead-free protective material “Trielle”.

This especially developed design ensures continuous, gap-free protection against scattered radiation, which once again significantly extends the previous shielding.

Perfect radiation protection combined with ergonomics, functionality and a sporty design.

Only safety glasses that are worn consistently protect against long-term damage. Therefore, fit and comfort are very important for relaxed and concentrated work.

The BR130 offers an ergonomic fit and individual adaptability. The nose pads are flexibly adjustable and the rubberised temple ends ensure a good grip and a comfortable fit behind the ear.

Due to the flat base curve of the eye frame, these glasses can also be offered for higher prescription values. MAVIG uses only the highest quality radiation protection lenses.

Fig. above:
1) *Design Shiny Onyx/Bordeaux*
2) *Design Glacier White/Bordeaux*
3) *Design Shiny Onyx/Graphit*
4) *Design Glacier White/Graphit*

5) *Inside view: Optional with a dosemetry connection*

For the modell BR130 , the dosemetry option is only in the colour design Shiny Onyx/Graphit available.

X-Ray Protective Glasses

Integration of Dosemetry

New Protective Material “Trielle”

Optical Glasses Corrections

Individually Adjustable

BR330

Dosemetry and radiation protection combined: The future in eye lense protection

The BR330 glasses are designed to best protect the user's eyes from scattered radiation from all angles of incidence.

This challenge was surmounted constructively by means of extensive radiation protection glazing and gap-free adjoining lateral radiation protection zones up to the temples including a tight seal against the cheekbones.

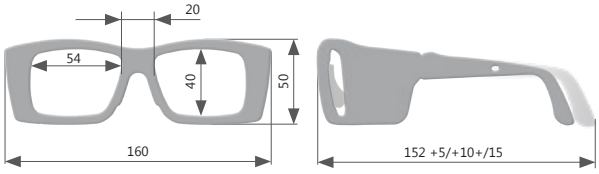
BR330 X-ray protective glasses with seamless, extended lateral protection zones, available with and without integrated, patented dosemetry conncetion

Colour designs	Ocean Blue Obsidian Grey/Black
Size	Universal/adjustable
Temple length	Adjustable
Inclination	Adjustable, ± 22.5°
Lead equivalent value	Front protection (50 - 150 kV) 0.50 mm Pb Side protection (50 - 150 kV) 0.50 mm Pb
Weight	ca. 120 g
Dosemetry connection*	Without, left, right or both sides *(BR330 dosemetry option is available for all colour designs)*
Extra	**Anti-reflective coating of the lenses** Glasses strap, case, cloth
Conformity	IEC 61331-1:2014 / IEC 61331-3:2014

** Dosemeters and dosemetry services are not included in the delivery. For the purchase of compatible dosemeters, as well as the dosemetry service, please refer to the instructions on page 3.*

Special Quality Features
Optimise the Use in the Medical Field

- Materials used ensure the greatest possible freedom from allergies
- Shape and material support the avoidance of injury risks
- Easy cleaning and very good resistance to chemical influences (resistance to disinfectants)



In the case of monitoring the eye lens dose, a consistent position of the dosemeter(s) is most ideal.Together with the project partners AWST Evaluation Centre of the Helmholtz Centre *(Hint: since april 1st, 2020 Mirion Technologies GmbH)* and Dosilab, MAVIG has efficiently integrated eye lens dosemetry in a concept for radiation protection glasses.

The BR330 glasses allow the use of dosemeters due to the patented dosemeter connection on the left, right or on both sides. The dosemeter connection was designed in such a way that there are no user restrictions and yet the best possible dosemetry is guaranteed.

The glasses are also available without a dosemeter connection in the form of pure radiation protection glasses.

Maximum wearing comfort and optimum radiation protection tailored to the individual facial geometry of the user requires a wide range of adjustment options.

The BR330 is therefore ergonomically designed and features additional adjustment mechanisms. The inclination of the front part, the length of the temples as well as the soft nose pad can be adjusted to suit your individual needs.

Designed with a flat base curve, the front of the BR330 glasses allow a very wide range of vision correction for single, bifocal, and progressive lenses.

MAVIG uses only protective lenses of the highest quality. This guaranties the best light transmission values and a maximum lens break resistance. An ideal composition of the protective material results in a high level X-ray absorption, and optimized production processes achieve an absolute homogeneous allocation of the glass additives.

Fig. above:
1) *Design Ocean Blue*
2) *Design Obsidian Grey/Black*

3) *Headband attachment*
4) *X-ray protective lenses with anti-reflective coating*
5) *Ergonomic temple ends*
6) *Length adjustment*
7) *Inclination (+/- 22,5°)*
8) *Dosemetry connection*
9) *Soft nose pads, adjustable*

X-Ray Protective Glasses

Integration of Dosemetry

Optical Glasses Corrections

Individually Adjustable

Our Traditional Basic Series

BR115

X-Ray Protective Glasses BR115
(picture shows the colour Black)

BR310

X-Ray Protective Glasses BR310
(picture shows the colour colour design Tortoise)

BR115

X-ray protection glasses with synthetic frame

Available colour	Black
Size	Universal
Lead equivalent value	Front (50 - 150 kV) 0.75 mm Pb Side (50 - 150 kV) 0.75 mm Pb
Weight	ca. 110 g
Included in delivery	Soft glasses strap, case
Conformity	IEC 61331-1:2014 / IEC 61331-3:2014

Optical corrections are not possible with this model.

Glasses width

Lenses height / Width

Width of nose bridge

Temple length

BR310

X-ray protection glasses with synthetic frame in Tortoise design with attractive brown tones and individually adjustable silicone nose pads.

Available colur design	Tortoise
Size	Universal
Lead equivalent value	Front (50 - 150 kV) 0.75 mm Pb Side (50 - 150 kV) 0.75 mm Pb
Weight	ca. 90 g
Included in delivery	Soft glasses strap, case
Conformity	IEC 61331-1:2014 / IEC 61331-3:2014

Optical corrections *Single, bifocal and progressive lenses are feasable*

Glasses width

Lenses height / Width

Width of nose bridge

Temple length

BR331

X-Ray Protective Glasses BR331
(picture shows the colour Blue-Transparent)

BR331

X-ray protection glasses with synthetic frame in a transparent design, set off with blue. The side protection with 0.50 mm Pb is placed in the laterally angled frame up to the height of the bracket.

Available colour	Blue-Transparent
Size	Universal
Lead equivalent value	Front (50 - 150 kV) 0.75 mm Pb Side (50 - 150 kV) 0.50 mm Pb
Weight	ca. 85 g
Included in delivery	Soft glasses strap, case
Conformity	IEC 61331-1:2014 / IEC 61331-3:2014

Optical corrections *Single, bifocal and progressive lenses are feasable*

Glasses width

Lenses height / Width

Width of nose bridge

Temple length

NEW! Virtual Try-On

Discover our new function to find the right X-ray safety glasses. This way, you can conveniently get a first impression of the optics of our glasses model via webcam or smartphone. *

Simply scan the QR code to choose and try on suitable radiation protection glasses.

www.mavig.com/virtual-mirror

* *In order to guarantee optimal radiation protection properties, a real fitting is always recommended, e.g. to ensure a gap-free fit on the face.*

Our Traditional Basic Series

BR118

X-Ray Protective Glasses BR118
(picture shows the colour Taupe)

BR119

X-Ray Protective Glasses BR119
(picture shows the colour Silver)

BR118

X-ray protection glasses with synthetic frame
and with additionally padded temple ends.

Available colour	Taupe , Blue , Black
Size	Universal
Lead equivalent value	Front (50 - 150 kV) 0.75 mm Pb
Weight	ca. 60 g
Included in delivery	Soft glasses strap, case
Conformity	IEC 61331-1:2014 / IEC 61331-3:2014

Optical corrections *Single, bifocal and progressive lenses are feasable*

Glasses width

Lenses height / Width

Width of nose bridge

Temple length

BR119

X-ray protection glasses with synthetic frame
and with additionally padded temple ends.

Available colour	Silver , Black
Size	Universal
Lead equivalent value	Front (50 - 150 kV) 0.75 mm Pb
Weight	ca. 65 g
Included in delivery	Soft glasses strap, case
Conformity	IEC 61331-1:2014 / IEC 61331-3:2014

Optical corrections *Single, bifocal and progressive lenses are feasable*

Glasses width

Lenses height / Width

Width of nose bridge

Temple length

BRV500

BRV501

Especially designed for the protection of medical professionals during radiological procedures. The visors enable a significant reduction in radiation exposure for the eye lenses and large parts of the facial skull.

Comfortably, glasses with prescription lenses can be worn underneath without restricting the field of vision under the visors.

BRV500 X-ray protective visor with continuous protection from forehead to the chin

BRV501 X-ray protective visor with protection down to the cheek bones and a cut-out for the nose

Designs	Full-area (BRV500) Up to the cheek bones (BRV501)
Size	Universal
Lead equivalent value	Front 0.10 mm Pb Side 0.10 mm Pb
Weight	ca. 525 g (BRV500) ca. 505 g (BRV501)
Conformity	IEC 61331-1:2014

These quality features of our visors make them ideal for the use in the medical environment

- Universal size / adjustable to fit different head sizes
- Multiple adjustments to conform to individual facial features
- Easy to set up for fitting the head of the wearer by simply pressing and turning the pivoting mechanism to prevent slipping
- Comfortable, exchangeable, and washable pads
- Curved lead acrylic glass with 0.10 mm Pb
- Low allergy risk due to carefully chosen materials

Optical corrections are not possible with visors.

X-Ray Tube Voltage	Attenuation Scattered Radiation
50 kV	96,9 %
60 kV	94,4 %
80 kV	86,3 %
100 kV	80,0 %
120 kV	75,0 %

NEW Upon Request – Sample Case With Individual Content

Our dealers have the option to order a sample case at a reduced price for their own distribution. The robust case has soft foam inserts and offers space for up to 12 individually chosen glasses models.

Our hospitals and practices can still receive any model as a sample, free of charge. *(Available for selected countries only.)* MAVIG's entire sales team will be happy to assist you and answer all your questions.

Virtual Try-On

In addition, you can visit our homepage at ***www.mavig.de/virtual-mirror***
There you can get a first impression of the optics of our protective eyewear models by trying them on online.

We will be happy to advise you.

EN

PRESCRIPTION VALUES

Prescription Values for X-Ray Protective Glasses with Individual Corrective Lenses

Customer/Name: _____ Date of Birth: _____

Article-No.: _____

Prescription Date: _____ Date: _____

For orders with corrective lenses, please fill-in below all relevant values from an optician's prescription for working place glasses:

☐ **Single**
☐ **Bifocal**
☐ **Progressive**

		Spherical/ Diopter	Cylindrical *1	Axis	Addition Values *2	Pupillary Distance *3
		Sph/Dpt	**Cyl**	**A**	**ADD**	**PD**
Distance (D)	Right Eye (R)	●●●	●	●	●●	●●●
	Left Eye (L)	●●●	●	●	●●	●●●
Near (N)	Right Eye (R)	●●	●	●		
	Left Eye (L)	●●	●	●		

*1 *If necessary, cylindrical values (Cyl) and axis values (A)*

*2 *Pupillary distance, separately for your left and right eye (PD)*

*3 *Addition values (ADD) (only Bifocal or Progressive lenses)*

Notice concerning your work glasses

Work glasses are glasses with custom made, multi-focal lenses, which are specifically made to allow for correct and clear vision in a close and intermediate range. For example, work glasses enable you to focus to the distance of the patient, as well as the distance of the monitors.

"Normal" bifocal or reading glasses cannot guarantee this, as they are made for seeing short and/or far distances. Hence, the prescription values of your work glasses might not necessarily be the same as for your personal bifocal glasses. When getting your lense prescription, please point out to your optician that these values are for work glasses.

If you regularly change between your personal and work glasses, please note that your eyes need a certain time to adapt.

Note – An order on prescription must include the pupillary distance!

For Sph/Dpt and Cyl values, please always include the + / - sign.

●●● Indicates information that is required for all prescription orders.

●● Indicates information required for bifocal and progressive orders.
(Distance Sph value + ADD value = Near Sph value)

● Indicates information that is required for certain corrections.
(No difference between Distance and Near values – Distance Cyl/A = Near Cyl/A)

TEMPLATE PRESCRIPTION VALUES

MAVIG GmbH
Head Office

Stahlgruberring 5
81829 Munich
Germany

P.O. Box 82 03 62
81803 Munich
Germany

Phone +49 (0) 89 420 96 0
Fax +49 (0) 89 420 96 200
E-mail info@mavig.com

GLOBAL MAVIG LOCATIONS

Nordic & Baltic countries
MAVIG Nordic
Stockholm
Sweden

Phone +46 (0) 722 25 25 68
E-mail larsson@mavig.com

Benelux, GB, Ireland
MAVIG B.V.

Mercuriusweg 86
2516AW The Hague
The Netherlands

Phone +31 (0) 70 33 11 688
Mobile +31 (0) 61 595 43 48
E-mail simmonds@mavig.nl

France
MAVIG France SARL

66, Ave. des Champs Elysées
F-75008 Paris
France

Phone +33 (0)1 30 59 46 23
Fax +33 (0)1 30 59 46 23
E-mail info@mavig.fr

South-East Europe
MAVIG South-East Europe

Ljubljana
Slovenia

Phone +386 (40) 6 33 900
E-mail dejak@mavig.com

FOREIGN OFFICES

USA & Canada
Ti-Ba Enterprises, INC.

25 Hytec Circle
Rochester, NY 14606
USA

Phone +1 (1) 585 247 1212
Fax +1 (1) 585 247 1395
E-mail mavigusteam@mavig.com

Middle East & North Africa
Mena Medical Development

Ashrafieh – Adlieh Square – Alfaras St.
- Alboustany Building, 5th floor
Beirut
Lebanon

Phone +961 14 23 499
Fax +961 14 26 499
E-mail mavig@mena-md.com

Russian Federation
AO Sante Medical Systems

Novodmitrovskaya 2, Bld.1
127015 Moscow
Russia

Phone +7 499 551 55 73/75
E-mail info@sante.ru

www.mavig.com

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