

Instruction Manual

Laser Attachment

Valid for Hardware SN 100 and higher

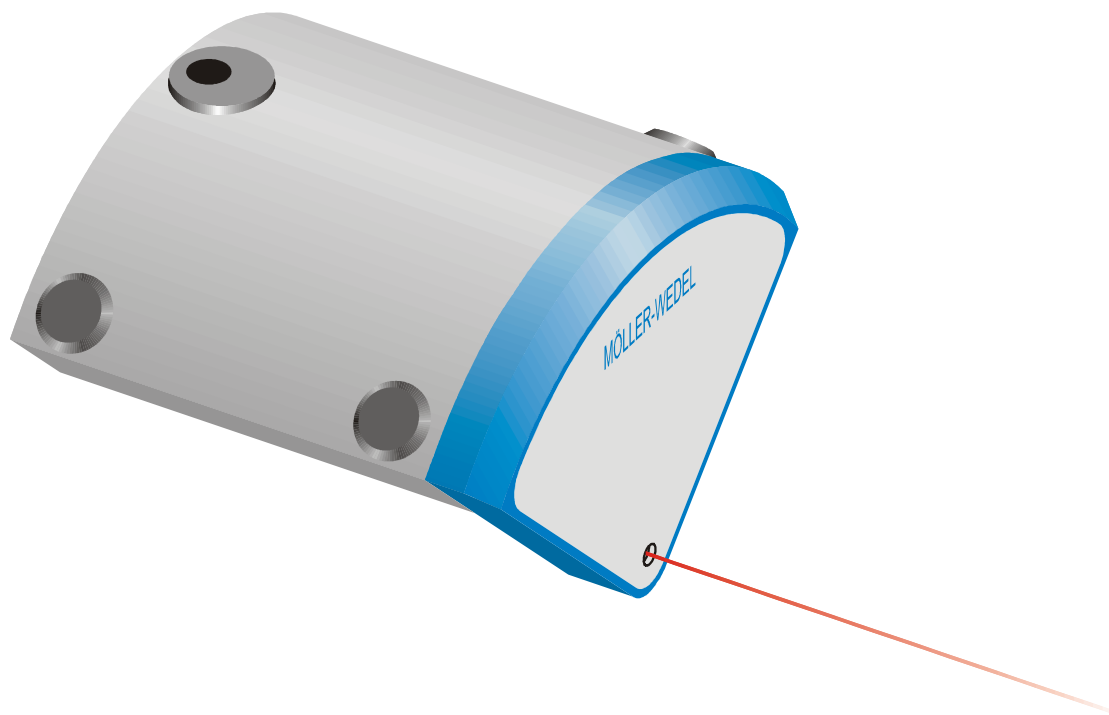


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1. Important Notes



Safety Remarks

This equipment must only be used following the instruction manual. Please read the instructions first.

- It is only allowed to use the equipment in the intended way.
- The equipment is only for use in clean and dry environment. Also see next paragraph.
- The valid accident prevention regulations of Employer's for Electrical Systems and Operating Materials and for Laser Radiation are to be observed. Special accident prevention regulations may occur out of the specific use of the instrument and have to be considered.
- The year of manufacturing and the serial number of the equipment is documented on the identification label.
- Keep this manual for later use.



Safety conditions for operating the Equipment

The following conditions are to observe for safe operating of the instrument:

- Only for indoor use. Use only in clean and dry environment. No conductance dirt cover or condensation. Equipment must be adapted to the operating conditions in time to avoid any condensation.
- Operating Temperature 15-30 °C.
- Humidity less 80% up to 32 °C linear decreasing to 50% at 40 °C.
- Height above zero normal not more than 2000 m.
- Tolerance of mains voltage not above 10% from nominal value.
- Mains voltage 100-240V~ AC depending on country.
- Operating the equipment in mains, where transient over voltage peaks exceed the common values (more than allowed according to Over Voltage Class III according to EC664) is forbidden.
- It is not allowed to cover power supplies, to short-circuit the output or to pull them by cable. Defect or damaged supplies and cables must be disabled and substituted by original MÖLLER-WEDEL OPTICAL spare parts.
- Power plugs are only allowed to clean with a soft and dry cloth. Before cleaning disconnect them from the main voltage and the equipment.

Additional restrictions in use may result of the measurement application and are listed in the technical data. There you will also find other base data.



MAINTENANCE AND CARE

Modifications or maintenance must only be carried out by persons explicitly authorised by MÖLLER-WEDEL OPTICAL GmbH.

Only original parts of MÖLLER-WEDEL OPTICAL must be used for maintenance.

After maintenance or technical modifications the equipment must be re-adjusted according to the technical instructions.

In case of technical inquiries the numbers on the relevant parts must be indicated.



Before cleaning or maintenance always disconnect from the mains and other equipment

Liability to Functions and Damage



If the equipment is modified or repaired by not explicitly authorised persons, in case of improper maintenance (as far as not performed by MÖLLER-WEDEL OPTICAL) or in case of improper handling, any liability of MÖLLER-WEDEL OPTICAL is excluded.

Accessories



Electrically driven accessories are permitted on the equipment only if its technically safe application is documented by a notified person (relevant certificate must be available).



The Laser Finder is classified as Laser Class 2. Please observe the valid security regulations.

Declaration of Conformity

The declarations according to CE, environment and disposal are attached in the end of the manual.

2. Intended Use

The laser attachment is designed to simplify the adjustment of telescopes, autocollimators for alignment to mirrors or other flat optical surfaces (prisms, polygons, plan plates). The laser attachment can be used in conjunction with autocollimators and telescopes with a tube diameter of 65 mm/40 mm depending on ordered type.

3. Safety notes

The instrument works contains a laser diode. A stickers at the front panel warns that the instrument contains a laser .



Danger!

Visible Laser Radiation

Don't look into the beam!

Laser safety class II as per IEC 825

Use only the laser power supply furnished with the laser attachment. Do not attempt to use the laser attachment with any other power supply.



Do not use the laser attachment in the height of your head.

4. Description of the device

4.1 Design

The laser attachment consists of the laser attachment unit (figure 1) and the power pack. In case of delivery with an ELCOMAT vario or an ELCOMAT 3000 only a power supply cable is supplied.

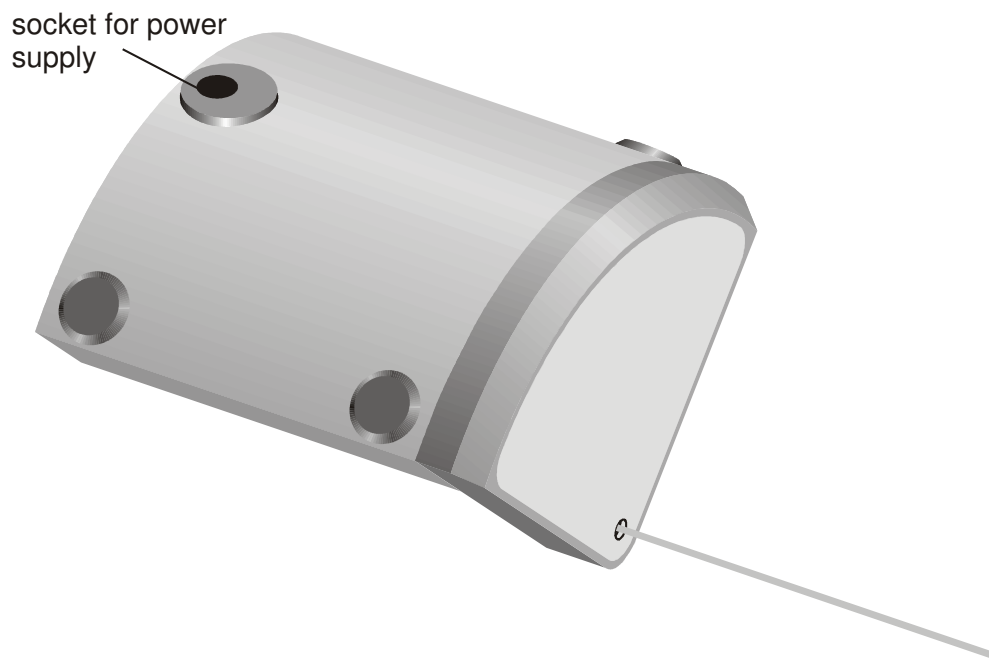


Figure 1: Laser attachment unit

4.2 Basic principle

The emitted laser beam of the laser diode is reflected by a plane reflector (mirror, polished glass plate or prism). The mirror or autocollimator to be aligned is adjusted if the emitted beam is reflected into themselves. To achieve it is necessary to tilt either the autocollimator or the mirror. The basic principle is shown in Figure 2.

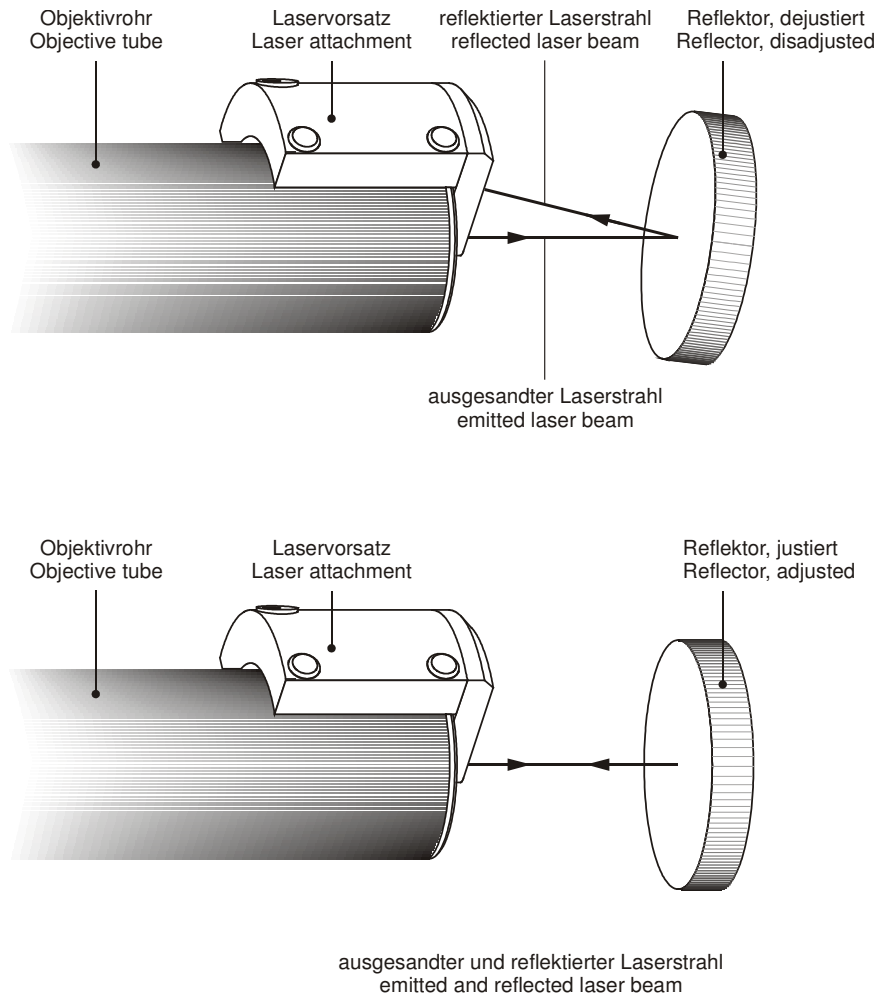


Figure 2: Basic principle of the alignment with the laser attachment

5. Installation

Fix the autocollimator in the adjustable holder or in the fixture D65 respectively D40.

Connect the power pack with the laser attachment. If used with an ELCOMAT connect the power cable with the laser attachment and with the plug on the rear side of autocollimation head.

Set the laser attachment on the objective tube of the autocollimator. It is hold by magnets at the underside.

Connect the power pack to power. If used with an ELCOMAT switch on the ELCOMAT. The laser diode emits a visible laser beam. Mirror or autocollimator to be adjusted have to be adjusted in height and side in such a way that the laser beam strikes the mirror approximately in the center. Tilt the mirror or the autocollimator with holder until the reflected beam and the emitted beam are superimposed.(Figure 3)

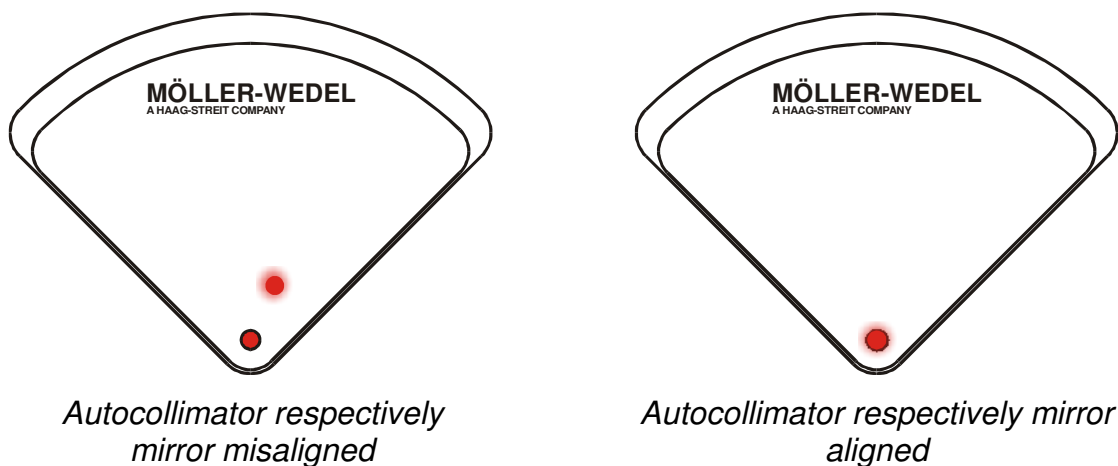


Figure 3: Position of the reflected laser beam in the misaligned and aligned position

After alignment of the mirror respectively of the autocollimator disconnect the laser diode from power and take the laser attachment off from the objective tube.

6. Environment conditions

- Protect the device against droplet water, gush water or sprayed water.
- Do not use the device in damp rooms.
- Working temperature: 15...30°C (limited by the laser diode)
- Storage temperature: -25...55°C

7. Technical Data

Laser safety class:	II
Power supply:	220 V AC/5...7 VDC with power pack
Laser wavelength:	633 nm
Total length:	112 mm
Inner diameter:	Ø65 ^{H7} respectively Ø40 ^{H7}
Weight	ca. 0.35 kg (without power pack)

8. Service

In principle the laser attachment is free of service and attendance. Please inform immediately MÖLLER-WEDEL OPTICAL when detecting irregularities and defects. MÖLLER-WEDEL OPTICAL or authorized companies will carry out the service.

If the lifetime of the laser diode is exceeded, the laser diode can be exchanged at the facilities of MÖLLER-WEDEL OPTICAL.



EG - Konformitätserklärung Declaration of Conformity

Hiermit erklären wir
We herewith confirm

MÖLLER - WEDEL OPTICAL GmbH
Rosengarten 10
D-22880 Wedel

daß das Produkt
that the device

LASERVORSATZ
LASER ATTACHMENT

Ident-Nr. / P/N	ab Serien-Nr. / S/N and higher
219 750	170
219 757	119
219 760	105
219 767	106

folgenden	73 / 23 / EWG	<i>corresponds</i>	73 / 23 / EEC
Richtlinien entspricht :	93 / 68 / EWG	<i>to the Directives :</i>	93 / 68 / EEC
	89 / 339 / EWG		89 / 336 / EEC

Angewendete Normen / *Relevant harmonized standards :*

EN 61010 -1	Sicherheitsbestimmungen für elektrische Meß-, Steuer-, Regel- und Laborgeräte, Teil 1 <i>Safety requirements for electrical equipment for measurement, control and laboratory use, part 1</i>
EN 50081-1	Elektromagnetische Verträglichkeit (EMV); Fachgrundnorm Störaussendung; Teil 1 <i>Electromagnetic compatibility (EMC); generic emission standard; part 1</i>
EN 50082-1	Elektromagnetische Verträglichkeit (EMV); Fachgrundnorm Störfestigkeit; Teil 1 <i>Electromagnetic compatibility (EMC); generic immunity standard; part 1</i>

Der eingebaute Laser entspricht der Laserschutzklasse II
The build in laser corresponds to the laser safety class II

Wedel, den 07.09. 2000

.....
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.....
i.A. S.Ruhland
Qualitätswesen / *Quality department*



Erklärung zu WEEE und RoHS

Declaration according to WEEE and RoHS

Hiermit erklären wir
We herewith confirm

MOELLER – WEDEL OPTICAL GmbH
Rosengarten 10
D-22880 Wedel
WEEE – Reg. Nr. DE 99474390

dass unsere Produkte folgenden
Richtlinien entsprechen
*that our products corresponds to
the Directives*

RoHS Restriction of Use of Certain Hazardous Substances,
Directive 2002/96/EC

WEEE Waste Electrical and Electronic Equipment, Directive
2002/96/EC

Angewendete Normen
Relevant harmonised standards

DIN EN 50914 Kennzeichnung von Elektro- und Elektronikgeräten
entsprechend Artikel 11(2) der Richtlinie 2002/96/EG
*Marking of electrical and electronic equipment in accordance with
Article 11(2) of directive 2002/96/EC*

Die Produkte der Firma MÖLLER-WEDEL OPTICAL GmbH sind, sofern sie in den Anwendungsbereich der WEEE und RoHS Direktive fallen normgerecht entweder auf dem Produkt selbst oder auf dem Garantieschein oder auf der Verpackung gekennzeichnet. Gekennzeichnet wird mit dem Datum des in den Verkehrbringens des Produktes in der Form JJJJ – MM – TT und der Bezeichnung „MÖLLER-WEDEL OPTICAL “ als Handelsmarke und der durchgestrichenen Mülltonne.

Hersteller im Sinne der Direktive ist der zum Zeitpunkt des in den Verkehrbringens autorisierte europäische Vertriebspartner der Firma MÖLLER-WEDEL OPTICAL GmbH des jeweiligen Staates der EU*. Bei diesem ist die kostenfreie Entsorgung dieses WEEE Produktes möglich, sofern es nach dem 13.08.2005 in der europäischen Union in den Verkehr gebracht wurden und keine andere Vereinbarung getroffen wurde.

Die Produkte sind RoHS konform, da sie nicht von Stoffverboten der RoHS betroffen sind. Sie dürfen verbotene Stoffe enthalten, weil die Produkte in die Kategorie „9. Überwachungs- und Kontrollinstrument – Geräte zum Messen, Wiegen, oder Regeln in Haushalt und Labor“ der WEEE Verordnung fallen.

*Für Deutschland und alle EU-Länder mit Direktvertrieb ist dieses die Firma MÖLLER-WEDEL OPTICAL GmbH

The products of the company MÖLLER-WEDEL OPTICAL GmbH are, as far as they fall under the directives WEEE and RoHS are marked in accordance with harmonised standard. They are marked directly on the product or on the warranty certificate or on the packaging. They are marked with the date of being put on the market, the crossed out wheeled bin and with the brand name „MÖLLER-WEDEL OPTICAL “.

Manufacturer according to the directives, is the authorised European representative of MÖLLER-WEDEL OPTICAL GmbH at date of first putting the product on the market in the corresponding EC-Country. This authorised European representatives will recycle this WEEE Product for free, if it has been put on the market after the 13.08.2005 in the European Community and no alternative agreement was made.*

The products are RoHS conform, but may contain the restricted substances. The use of the substances is allowed because the products do fell in the WEEE product category "9. Monitoring and Controlling Instruments".

**For Germany and all countries of the EC with direct marketing this will be MÖLLER-WEDEL-OPTICAL*

Dr. Schlewitt Geschäftsführer / Managing Director