Novanta

VERSIA10 2-Axis Scan Head

User Manual

Read carefully before using.
Retain for future reference.

Manufacturer

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Customer service

Before contacting us for assistance, please review appropriate sections in this manual that may answer your questions. After consulting the manual, please submit a request through our website: https://novantaphotonics.com/technical-support-request-form-header/

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 HOW TO USE THIS USER MANUAL

1.1 SYMBOLS AND SIGNAL WORDS

Please be sure that you understand the meanings of the symbols and signal words described below before you move on.

DANGER

… indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.[1]

WARNING

… indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.[2]

[1] Serious injury includes blindness, wounds, burns (low and high temperature), electric shock, fractures, and poisoning, etc. which have long-lasting consequences or require hospitalization and/or long-term treatment.

[2] See previous footnote.

⚠ CAUTION

… indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.[3]

⚠ NOTICE

… indicates a potentially hazardous situation which, if not avoided, could result in property damage and other problems, but not personal injury.

IMPORTANT

… indicates an important information.

TIP

… indicates a practice that facilitates work.

Procedure

… indicates a call to action. After this signal word you must execute one or more steps. We made an exception for warnings where we omitted this signal word, as avoidance procedures are mandatory there.

1.2 NOTATION CONVENTIONS

This user manual uses the following notation conventions.

[3] Minor or moderate injury includes wounds, burns, electric shock, etc. not requiring hospitalization and/or long-term treatment.

Notation	Meaning
Underlined	click-able cross reference or hyperlink
[⟨Number⟩]	cross reference to a list of further reading on page 42
Bold	element in the graphical user interface that the user shall click
Italic	name of element in the graphical user interface or emphasized text
`Typewriter`	text that the user must type in, filename, or path

1.3 STORAGE AND REPLACEMENT

- Keep this user manual with the VERSIA scan head to access it at any time during its lifetime.
- You can access a copy of this manual on our website: https://novantaphotonics.com/product/versia-2-axis-scan-head/.
- This user manual is part of the product. If ownership changes, then this user manual must accompany the VERSIA scan head.

1.4 SPECIFICS AND STRUCTURE

Novanta reserves the right to make changes to the VERSIA scan head covered in this user manual to improve its performance, reliability, or manufacturability. Contents of this user manual are subject to change without notice.

Although every effort has been made to ensure the accuracy of the information contained in this user manual, Novanta assumes no responsibility for inadvertent errors.

- Be mindful of the environment, do not print this manual unless necessary.

1.5 TARGET AUDIENCE AND QUALIFICATION

IMPORTANT

Only target audience, who are listed in the beginning of each instructing section in the following chapters, may perform the activities described there.

The people who perform these activities need to be of age.

The qualification of the target audience is defined below.

Laypersons

without special qualification, who e.g., transport and store the boxed VERSIA scan head.

Operators

who are trained by the company that is operating the laser unit that contains the VERSIA scan head, in the use of that laser unit and who confirmed the training by signature.

Experts

in electrical engineering or mechatronics with successful training in handling highly sensitive electronic and optical equipment. Experts must be trained by the company that is operating the laser unit that contains the VERSIA scan head in the use of that laser unit.

2 GENERAL SAFETY INSTRUCTION

This chapter lists important precautions which users of the VERSIA scan head (and anyone else) must observe to avoid injury and damage to property, and to ensure safe and correct use of the VERSIA scan head.

2.1 DISAMBIGUATION OF TERM 'LASER UNIT'

A *laser unit* is a machine that incorporates a laser device (that is the actual laser), the VERSIA scan head and other components.

2.2 INTENDED USE

VERSIA scan head is delivered as an OEM component for integration into a laser unit that uses a class 4 laser and that will be operated in a dry and clean indoor environment without electrically conductive contamination.

- Before installing and operating the VERSIA scan head, carefully read this user manual for your protection.
- Retain this user manual for future reference.

IMPORTANT

Novanta has no influence over the employed laser device or the overall laser unit.

- Customers assume full responsibility for implementing and maintaining a laser-safe working environment.
- Original equipment manufacturer (OEM) customers assume full responsibility for CDRH (Center for Devices and Radiological Health) certification and compliance with the standards and guidelines required for the CE (European Conformity) label.
- Please contact Novanta for further information about the VERSIA scan head and applicable guidelines.

2.3 REASONABLY FORESEEABLE MISUSE

It is considered a misuse if you use VERSIA scan head without incorporating it into a laser unit that complies with the standards and guidelines required for the CE (European Conformity) label.

2.4 HAZARDS

IMPORTANT

- Follow the control measures and safety guidelines provided by the laser's manufacturer, and those established by your Laser Safety Officer (LSO), Radiation Safety Officer (RSO), or safety department of your business or institution.

2.4.1 THERMAL HAZARDS

⚠ WARNING

Explosive and flammable materials under the scan head can cause burns.

- Consult the respective material safety data sheets and provide appropriate protective measures.

⚠ CAUTION

Hot laser-processed materials can cause burns.

- If you are the system integrator, then place a sign at the laser processing area that warns about hot surfaces.
- If you are the operator and must handle laser-processed materials by hand, then wear personal protective equipment (heat resistant gloves).

2.4.2 RADIATION HAZARDS

⚠ WARNING

Laser radiation can cause burns and damage to eyes and skin.

- Consult the laser user manual and …
  - If you are the system integrator, then provide appropriate protective measures.
  - If you are the operator, then wear personal protective equipment (laser safety goggles according to the parameters of the laser in use).

⚠ WARNING

If you use an ultra-short-pulsed laser and if the irradiance limit is exceeded, then **X-rays** are emitted from the processing point. This can cause burns and damage to eyes and skin. It also can have effects on the reproductive capability and cause cancer.

- Consult the laser user manual and provide sufficient shielding.

⚠ WARNING

If you use an ultra-short-pulsed laser, then under certain circumstances **UV radiation** is emitted from the processing point. This can cause burns and damage to eyes and skin. It also can cause cancer.

- Consult the laser user manual and provide sufficient shielding.

2.4.3 MATERIAL / SUBSTANCE HAZARDS

⚠ WARNING

Laser generated air contaminants (dust, fume, vapor) can cause cancer, poisoning, breathing difficulties, suffocation, sensitization, and can influence the reproductive capability. They also can pose a risk of explosion and a fire risk.

- Consult the respective material safety data sheet and provide an appropriate dust, fume, and vapor extraction.

2.4.4 ERGONOMIC HAZARDS

⚠ CAUTION

Unergonomic work environment can cause discomfort, fatigue, musculoskeletal disorder, and stress.

- If you are the system integrator, then provide an ergonomic work environment.

2.4.5 ELECTRIC HAZARDS

⚠ NOTICE

Electrostatic discharge can damage the VERSIA scan head.

- Transport the VERSIA scan head only in anti-static packaging and packaging equivalent to that received with the shipment.
- Keep the VERSIA scan head sealed in anti-static packaging until within an ESD-controlled environment.

A proper static control station should include:

- ☐ A soft grounded conductive tabletop or grounded conductive mat on the tabletop
- ☐ A grounded wrist strap with the appropriate (1 MΩ) series resistor connected to the tabletop mat and ground
- ☐ An adequate earth ground connection, such as an uncoated water pipe or AC ground
- ☐ Conductive bags, trays, totes, racks, or other storage
- ☐ Properly grounded power tools
- ☐ Personnel handling ESD items must wear ESD protective garments and ground straps

2.5 MODIFICATIONS AND SPARE PARTS

Modifications to VERSIA scan head are not permitted and no parts are available for replacement.

2.6 FIRE EXTINGUISHER RECOMMENDATION

Procedure

- Use a carbon dioxide (CO_2) fire extinguisher.
- Ensure the fire extinguisher used is compatible with the entire laser unit.
- Prior to installing the VERSIA scan head, ensure the fire extinguisher is available and observe its instructions for use including its hazard notes.

3 OVERVIEW

VERSIA, 2-axis hybrid scan head, features a compact, industrial design that is ideal for versatile applications such as high-speed raster scanning and bitmapping. Designed for simple system integration due to its compact size and standard industrial interfaces, VERSIA offers both XY2-100 protocol as well as Novanta's bi-directional communication NVL-100 which allows users to monitor position feedback among other monitoring tools. This is due to the digital servo design which enables to carry multiple tunes on the scan head where each tune is optimized for specific applications.

In addition, the scan head has passed numerous extreme condition tests to ensure reliability and safety and is IP54 rated.

Optimized System Performance

- Ability to carry multiple tunes where each tune is optimized for the specific applications
- Bi-directional communication enables position feedback monitoring
- Sky Writing eliminates the processing time loss due to acceleration and deacceleration times

Easy to Integrate and Implement

- Compact industrial design reduces system footprint, making it easy to integrate into existing systems
- It supports industry standard interface XY2-100 with a single DB25 connector as well as Novanta's NVL-100

3.1 LABELS

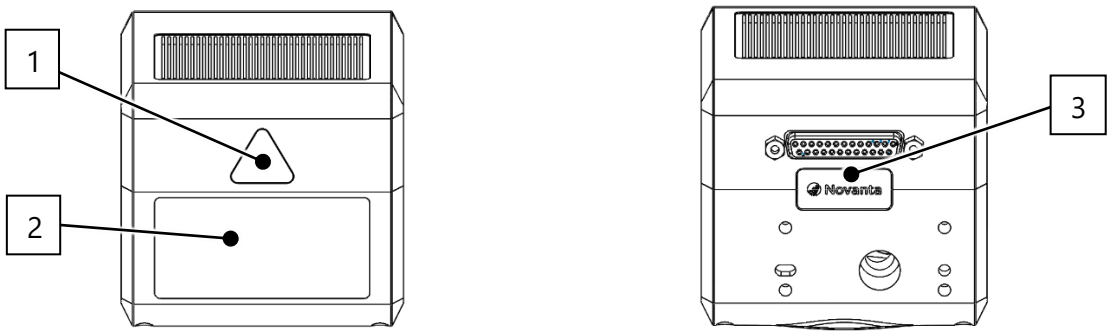


Figure 1: Position of labels

Legend to Figure 1

No.	Label	Description
1		Warning of laser beam label
2		Type label Product name Aperture in millimeters λ: wavelength PN: part number SN: serial number
3		Warranty label

3.2 INTERFACES

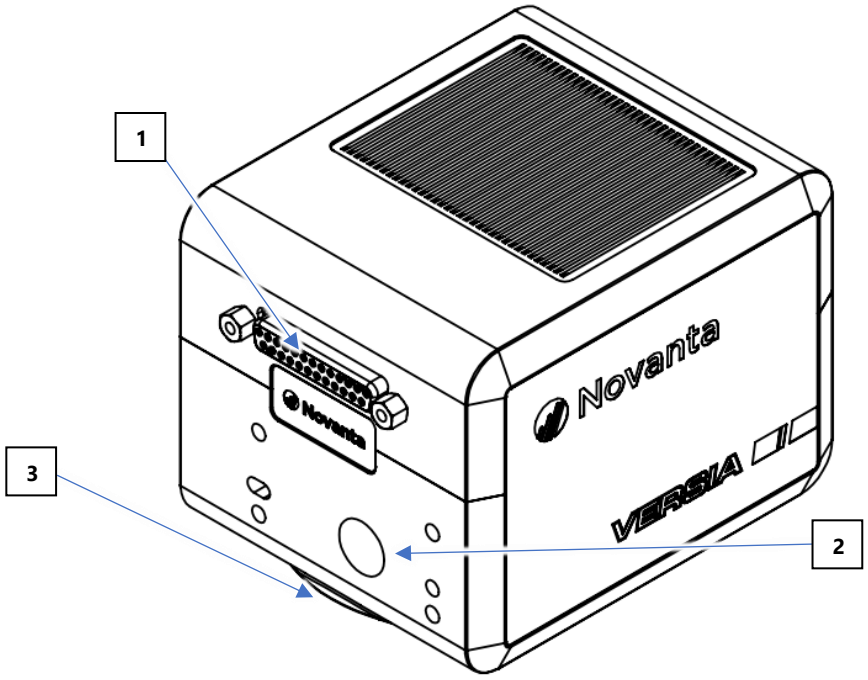


Figure 2: Position of the interfaces

Legend to Figure 2

No.	Marking / function	See section	On page
1	– / Power supply, control, and feedback signals	4.3.2	24
2	– / Laser beam input	4.3.1	21
3	– / Laser beam output	4.3.1	21

3.3 CONTROLS AND INDICATORS

There are no controls or indicators on VERSIA scan head.

4 PREPARE FOR USE

This chapter describes all procedures necessary to get VERSIA ready for use.

4.1 TRANSPORT AND STORAGE

Target audience and qualification

Laypersons, operators, and experts

Requirements

Characteristic	Specification
Conditions	Dry and clean indoor environment without electrically conductive contamination
Storage temperature	-35 to 60 °C (238 to 333 K)
Humidity	20 to 80 % RH, non-condensing

Safety precautions

- ☐ Wear personal protective equipment (safety shoes, waterproof assembly gloves) to prevent crushing and bruises caused by falling scan head.
- ☐ Handle VERSIA scan head with care.

Procedure

- Transport and store VERSIA scan head in its sealed original packaging or an equivalent packaging.

4.2 UNPACKING

Target audience and qualification

Experts

Have ready

- ☐ Utility knife

Safety precautions

- ☐ Wear personal protective equipment (safety shoes, waterproof assembly gloves) to prevent crushing and bruises caused by falling scan head.
- ☐ Handle VERSIA scan head with care.

Procedure

1. If any shock indicator is present and triggered, then block the delivery and inform the sender.

⚠ NOTICE

Contamination can damage optics.

- Leave any protective covers in place for as long as possible to keep the optics clean.

2. While carefully unpacking VERSIA, keep in mind that you want to retain the packaging for future use.

   In case a unit return is necessary, we recommend documenting the unpacking e.g., by taking photographs.

3. Please check based on the delivery bill whether all items are present, and their serial numbers match the delivery bill. Also check by eye if the goods are free of defects. If any of these do not apply, then block the shipment and inform the sender.
4. Retain the original packaging for future use.

4.3 INSTALLATION

This section summarizes procedures necessary to mount VERSIA in the laser unit and to connect all supply lines.

4.3.1 INCORPORATING THE VERSIA SCAN HEAD INTO THE LASER UNIT

Target audience and qualification

Experts

Have ready

- ☐ Machine screws suitable for mounting VERSIA in the laser unit; see Figure 3 on page 23. NOTE: Observe the permitted tightening torque of the screws used.
- ☐ Suitable screwdriver, hexagon socket screw key set, Torx key set

Requirements

Table 1: Environmental

Characteristic	Specification
Conditions	Dry and clean indoor environment without electrically conductive contamination
Operating temperature	15 to 40 °C (288 to 308 K)
Humidity	20 to 80 % RH, non-condensing

Table 2: Physical

Characteristic	Specification
Laser beam input	Find the aperture and wavelength on VERSIA's type label

Characteristic	Specification
Optical power input	
for 9.2 to 10.6 µm (CO_2)	check with manufacturer
for 1020 to 1090 nm (Fiber)	max. 200 W
for 513 to 534 nm (Green)	check with manufacturer
for 425 – 465 nm (Blue)	check with manufacturer
for 341 – 357 nm (UV)	check with manufacturer
IP rating	IP54
Dry weight	1.26 kg
Dimensions (L × W × H)	114 mm × 97 mm × 86 mm

Table 3: Dimensions you need to design the lens spacer besides the dimensions of your F-Theta lens

Characteristic	Specification
Output aperture thread	M79×1.0 - 6H ↧4
Distance mirror center to mirror center	12.540 mm
Distance Y-mirror center to surface at beam exit	25.089 mm

Safety precautions

- ☐ Ensure fire extinguishing equipment is available and follow its instructions; see also section 2.6 on page 15.
- ☐ Switch off the laser unit that contains VERSIA. Switch off the laser device, power supply and particularly disable moving parts.
- ☐ Wear personal protective equipment (safety shoes, waterproof assembly gloves) to prevent crushing and bruises caused by falling scan head.
- ☐ Handle VERSIA scan head with care.

Procedure

> **NOTICE**
>
> Contamination by burned protective covers can damage optics.
>
> - Remove protective covers at the last possible moment during the installation procedure.

- Use the M5 mounting threads as indicated in Figure 3 on page 23 to mount the VERSIA scan head on its place in the laser unit.

Specifics of the interface

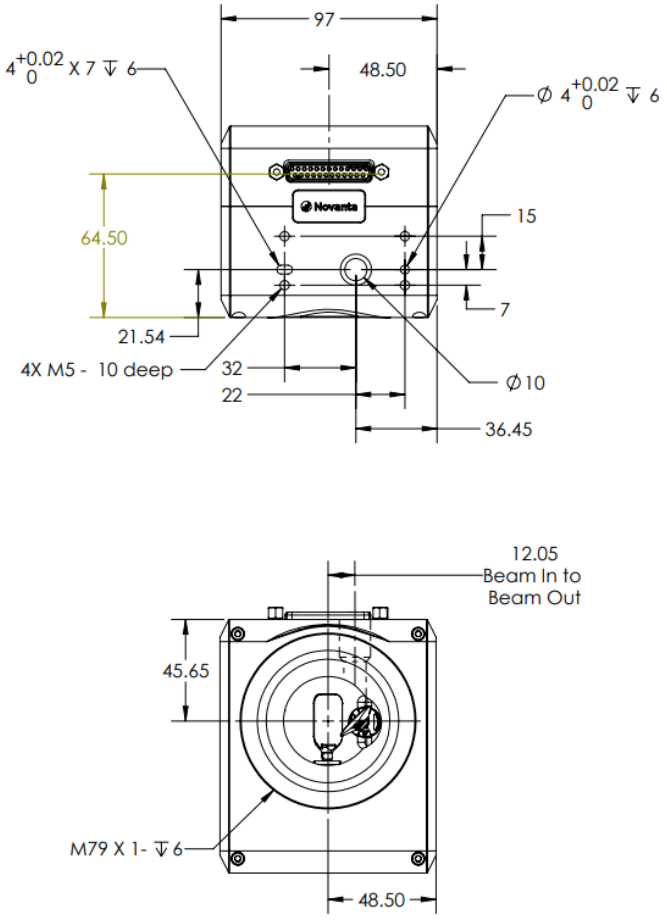


Figure 3: Dimensions of Versia10 in millimeters

4.3.2 CONNECTING THE POWER SUPPLY, CONTROL, AND FEEDBACK SIGNALS

Target audience and qualification

Experts

Have ready

- ☐ D-sub 25-pin, male connector with housing

  Cable: max. 6 m recommended length (contact customer service if necessary); shielding not necessary, but recommended; note the cross-section of the cable strands regarding the current; see Table 4 on page 26, pins 9, 10, and 22

Procedure

NOTICE

Unequal ground potentials immediately damage the VERSIA scan head.

- Bring ground of the command signals on VERSIA scan head side and scan controller side to equal potential.

NOTICE

Inverted polarity of the supply voltage immediately damages the VERSIA scan head.

- Correctly connect the power supply to the connector; see Table 4 on page 26.

1. Create a cable that connects the power supply and the scan controller to the scan head by following the information in Table 4 on page 26 and the following.

NOTICE

Hot plugging can damage the VERSIA scan head.

- Before connecting or disconnecting, ensure that no voltage is being applied to the VERSIA scan head. Turn off the power supply.

2. Connect the scan controller and the power supply to the VERSIA scan head.

NOTICE

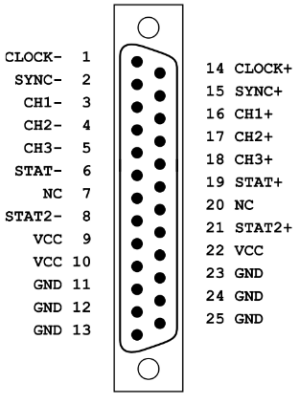
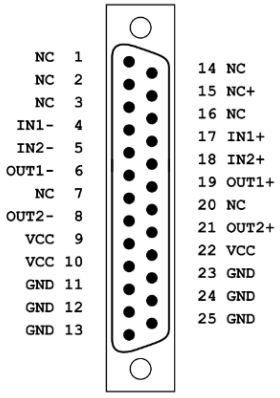
Excessive inrush current can damage the VERSIA scan head.

- The DC power supply must not be switched directly using a contactor. Instead, utilize the soft-start feature of the power supply and perform switching on the AC input side of the power supply.

Specifics of the interface

Marked: no
Connector: D-sub 25-pin, female

Table 4: Pin assignment of the power, control, and feedback signal connector

Pin	Function XY2-100	Function NVL-100
		
1	CLK_N	NC
14	CLK_P	
2	SYNC_N	
15	SYNC_P	
3	POS-X_N	
16	POS-X_P	
4	POS-Y_N	DATA_IN1_N
17	POS-Y_P	DATA_IN1_P
5	POS-Z_N	DATA_IN2_N
18	POS-Z_P	DATA_IN2_P
6	STAT_N	DATA_OUT1_N
19	STAT_P	DATA_OUT1_P
7	NC	NC
20		

Pin	Function XY2-100	Function NVL-100
8	STAT2_N	DATA_OUT2_N
21	STAT2_P	DATA_OUT2_P
9	Power supply (VBus); 48 V, max. 5 A	Power supply (VBus); 48 V, max. 5 A
22		
10		
23	Power ground; must be connected to protective earth	Power ground; must be connected to protective earth
11		
24		
12		
25		
13		

Table 5: XY2-100 signals

Function XY2-100	Description	Direction
CLK	Clock signal	Command signal
SYNC	Frame synchronization signal	
POS-X, -Y, -Z	X-, Y-, and Z-position data	
STAT	Scan head status	Feedback signal

Table 6: NVL-100 signals

Function NVL-100	Description		Direction
	Subframe 1 (B-/M-preamble)	Subframe 2 (W-preamble)	
DATA_IN1_P / ~N	X-position data	Y-position data	Command signal
DATA_IN2_P/N	Z-position data	4th-position data	
DATA_OUT1_P/N	X actual position	Y actual position	Feedback signal
DATA_OUT2_P/N	Z actual position	4th actual position	

4.3.3 INSTALLING THE SOFTWARE

The software is needed for calibration of the scan field and for later control of the scan head.

Target audience and qualification

Experts

Requirements

- ☐ If you are using a controller other than the ScanMaster Controller (SMC), follow the installation procedure described in the documentation for that controller instead of the procedure described below.

Procedure

1. Download the *Calibration Wizard* (*CalWizard*) and the *ScanMaster Designer* software from https://novantaphotonics.com/manual-documents/?manual=7797.
2. Install the *Calibration Wizard* (*CalWizard*) and the *ScanMaster Designer* software.

4.4 COMMISSIONING

This section describes how to commission VERSIA, i.e., what must be done when and after switching it on for the first time.

4.4.1 SWITCHING ON FOR THE FIRST TIME

Target audience and qualification

Experts

Requirements

- ☐ VERSIA is installed according to section 4.3 on page 21 ff
- ☐ Laser beam specifications

Characteristic	Specification
Laser beam input	Find the aperture and wavelength on VERSIA's type label
Optical power input	
for 9.2 to 10.6 µm (CO_2)	check with manufacturer
for 1020 to 1090 nm (Fiber)	max. 200 W
for 513 to 534 nm (Green)	check with manufacturer
for 425 – 465 nm (Blue)	check with manufacturer
for 341 – 357 nm (UV)	check with manufacturer

- ☐ F-Theta lens
- ☐ Lens spacer (between scan head and F-Theta lens)

  Dimensions you need to design the lens spacer besides the dimensions of your F-Theta lens:

Characteristic	Specification
Output aperture thread	M79×1.0 - 6H ↧4

Characteristic	Specification
Distance mirror center to mirror center	12.540 mm
Distance Y-mirror center to surface at beam exit	25.089 mm

Safety precautions

IMPORTANT

VERSIA must be incorporated in a laser unit and integrated into its safety concept.

Procedure

1. Switch on the scan controller and power of VERSIA.

⚠ WARNING

Laser radiation can cause burns and damage to eyes and skin.

- Consult the laser user manual and wear personal protective equipment (laser safety goggles according to the parameters of the laser in use).

2. Adjust the optical laser power so that you can just observe it with an indicator card.
3. Align the laser beam into the scan head.

   Since we do not know your system structure, we can only state conditions that must be met at this point:

   a. The laser beam must be coaxial to VERSIA's optical axis.

   b. The laser beam must enter the input aperture in the center.

   c. The laser beam must exit the output aperture in the center (0,0 position) if previously aligned correctly.

4. Switch off the laser beam.
5. Install the F-Theta lens and required lens spacer.

Positioning of the lens relative to the scan head is critical for both scanning performance and safety of the scanning mirrors. There is a matching lens spacer for each lens model.

6. Proceed to section 4.4.2 on page 31.

4.4.2 CALIBRATING THE SCAN FIELD

You must calibrate the scan field, otherwise the output will not match the desired result.

Target audience and qualification

Experts

Requirements

- ☐ VERSIA is switched on according to section 4.4.1 on page 29
- ☐ If you are using a controller other than the ScanMaster Controller (SMC), follow the calibration procedure described in the documentation for that controller instead of the procedure described further below.

Set up for initial use

Delay parameter settings are variable because of each application's requirements and the controllers that are used fluctuate.

Use the delay settings outlined in the table below as a starting point, then fine tune the settings as needed.

Table 7: Recommended delay settings for initial use

Characteristic	Specification
Mark delay	2 × Tracking error
Jump delay	Tracking error
Polygon delay	0.5 × Tracking error
Laser on	Laser-dependent

Characteristic	Specification
Laser off	Laser-dependent

Procedure

- Take the *Calibration Wizard User Manual* to hand and follow the procedures described there, especially in chapters 4 to 7. You can download the *CalWizard Manual* (document number 1040-0008) from https://novantaphotonics.com/manual-documents/?manual=7797.

  After that, VERSIA is ready to use.

5 OPERATING

5.1 PROTECTION AND EMERGENCY MEASURES

IMPORTANT
VERSIA must be incorporated in a laser unit and integrated into its safety concept.

5.2 OPERATIONAL PROCEDURES

VERSIA has no control elements. Use a scan controller to control the VERSIA.

Target audience and qualification

Operators and experts

Requirements

- ☐ You have successfully finished all necessary commissioning procedures.
- ☐ The laser unit, that contains VERSIA, complies with the standards and directives that are required by the declarations of incorporation of all laser unit components.
- ☐ The power supply is switched on.
- ☐ All peripheral devices that are connected to the scan controller are switched on and ready.
- ☐ The scan controller is switched on.
- ☐ The scan controller software is running and connected to the scan controller.

Procedure

- Control VERSIA and the laser via the scan controller.

  Please find further reading in the documentation of the installed hardware and software components.

5.3 OBSERVABLE SIGNALS

VERSIA has no visual or audible indicators that provide observable signals.

5.4 ORIENTATION OF THE COORDINATE SYSTEM

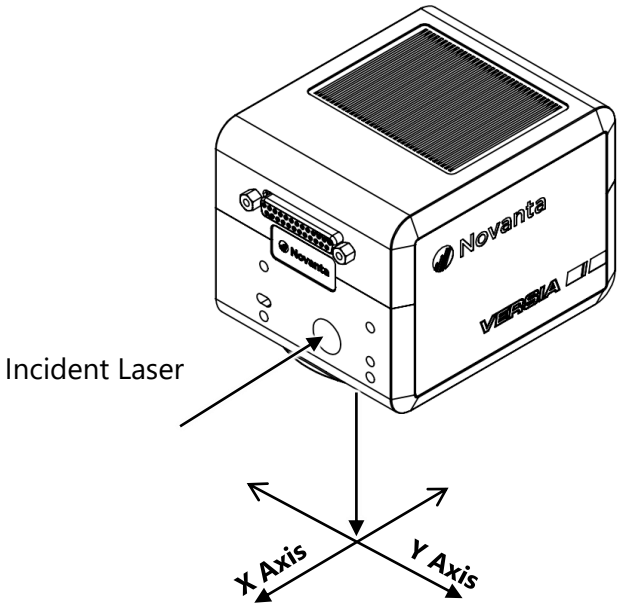


Figure 4: Orientation of the coordinate system with regards to the scan head orientation. The positive and negative direction of each axis max vary depending on the chosen controller settings

5.5 TROUBLESHOOTING

Target audience and qualification

Operators and experts

Procedure

1. Determine how a failure manifests (symptom).
2. In Table 8 on page 35 find a matching measure and implement it then.

   Please also find further reading in the documentation of the installed hardware and software components. These may be the SMC (ScanMaster Controller) and SMD (ScanMaster Designer) by Novanta or any other scan control system that is capable of the XY2-100 or NVL-100 protocol.

   If troubleshooting is not possible or if you are not skilled to do so, please contact a local expert first and if more assistance is needed contact customer service.

Table 8: Troubleshooting

Symptom	Potential root cause	Measure
–	–	–

6 CLEANING, MAINTAINING, AND REPAIR

Cleaning, maintaining, and the repair of VERSIA are limited to the procedures described in this chapter. Please contact customer service for additional support.

6.1 CLEANING

Cleaning VERSIA scan head is not necessary. But cleaning the F-Theta lens may become necessary when the laser processing results become unacceptable. In this case, it is recommended to only clean the F-Theta lens, as every cleaning degrades its optical quality.

Target audience and qualification

Experts

Safety precautions

- ☐ Switch off the laser unit that contains VERSIA. Switch off the laser device, power supply and particularly disable moving parts.

Procedure

- Clean the F-Theta lens according to its manufacturer's instructions.

6.2 MAINTAINING

We recommend creating a maintenance plan. Its cadence depends on the degree of contamination in the work environment. We recommend at least the maintenance plan below.

Table 9: Maintenance plan

Interval	Measure	See section	On page
Annually	• Check the laser unit and the incorporated VERSIA according to standard EN 60204. Check the electrical safety of all connecting cables and particularly the mains cable.	–	–

6.3 REPAIR

There are no serviceable parts inside the scan head. Opening or disassembly of VERSIA could risk your safety and safe operation of the scan head and will void the warranty. If a repair becomes necessary, please contact customer service.

7 DECOMMISSIONING, RETURNING, AND DISPOSAL

7.1 DECOMMISSIONING

Target audience and qualification

Experts

Requirements

- ☐ Decommission the VERSIA scan head only if you want to return it, were instructed to do so, or if you want to dispose of it.

Have ready

- ☐ Suitable screwdriver for the mounting screws
- ☐ Original protective covers for the laser beam entrance and exit. If the original protective covers are not available any more then alternatively use Polyamide tape

Safety precautions

- ☐ Switch off the laser unit that contains the VERSIA scan head. Switch off the laser device, power supply and particularly disable moving parts.
- ☐ Wear personal protective equipment (safety shoes, waterproof assembly gloves, safety goggles) to prevent crushing and bruises caused by falling scan head.
- ☐ Handle VERSIA scan head with care.

Procedure

NOTICE

Hot plugging can damage the VERSIA scan head.

1. Before connecting or disconnecting, ensure that no voltage is being applied to the VERSIA scan head. Turn off the power supply.

2. Disconnect the power supply and electrical lines from the VERSIA scan head.
3. Dismount the VERSIA scan head from the laser unit.
4. Fix the protective covers over the laser beam entrance and exit.
5. Clear the VERSIA scan head of contamination with any dangerous materials prior to further handling.

7.2 RETURNING

This section describes how to prepare the VERSIA scan head if you want to return it.

Target audience and qualification

Laypersons, operators, and experts

Requirements

- ☐ VERSIA scan head has been decommissioned; see section 7.1 on page 38

Have ready

- ☐ Original packaging or an equivalent packaging
- ☐ Parcel tape

Safety precautions

- ☐ Wear personal protective equipment (safety shoes, waterproof assembly gloves) to prevent crushing and bruises caused by falling scan head.

- ☐ Handle VERSIA scan head with care.

Procedure

1. Contact customer service.

   You will receive instructions about how to proceed.

2. If you are instructed to return the VERSIA scan head, then package it in its original or equivalent packaging to prevent damage during transport.

   As memory aid use the documentation that you may have taken during unpacking.

3. Arrange for return consignment.

7.3 DISPOSAL

The VERSIA scan head is designed to be integrated into large-scale stationary industrial tools, therefore 2012/19/EU (WEEE) does not apply.

By ensuring the VERSIA scan head is disposed correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate waste handling of the VERSIA scan head. The recycling of materials will help to conserve natural resources.

Target audience and qualification

Laypersons, operators, and experts

Requirements

- ☐ The VERSIA scan head has been decommissioned; see section 7.1 on page 38.

Safety precautions

- ☐ Wear personal protective equipment (safety shoes, waterproof assembly gloves) to prevent crushing and bruises caused by falling scan head.
- ☐ Handle VERSIA scan head with care.

Procedure

- Do not treat the VERSIA scan head as household waste. But hand it over to the applicable collection point or to the manufacturer as described in section 7.2 on page 39.

  For more detailed information, please contact your local city office, your disposal service, or our customer service.

8 APPENDIX

8.1 SPARE PARTS

If not mentioned otherwise, the given part numbers are the manufacturer's part numbers.

Figure	Description	Part number
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8.2 FURTHER READING

Please find more information in the documentation of the installed hardware and software components.

These may be the ScanMaster Controller (SMC) and ScanMaster Designer (SMD) by Novanta or any other scan control system that is capable of the XY2-100 or NVL-100 protocol.

If you are using the ScanMaster Controller (SMC) and want to calibrate the scan field, then read the *Calibration Wizard User Manual*. You can download the *CalWizard Manual* (document number 1040-0008) from https://novantaphotonics.com/manual-documents/?manual=7797. If you are using a different controller, refer to its documentation for calibration procedures.

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VERSIA10 2-Axis Scan Head
User Manual
1040-0041 Rev. 02