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Introduction

Thank you for purchasing the CHAMELEON Series Laser Marking System.

Please read and obtain a full understanding of this manual before installation and operation.

Please read the CDRH requirements under the Safety Section.
Safety

Laser Safety

The Chameleon Series marking system contains a state-of-the-art diode-pumped solid-state laser that produces intense and invisible laser radiation at a wavelength of 1064 nm in the near infrared spectrum. The LE series is designed as a CLASS IV device. Improper use of controls and adjustments or performance of procedures other than those specified in this manual may result in hazardous exposure to the laser radiation.

Remember the following safety precautions when operating the laser system.

1. Exposure to laser radiation may produce physical burns and can cause severe eye damage. Even if the system is designed under the safest class rating, CLASS I, we recommend that the operator use eye protection goggles. **Always wear eye protection with an optical density of 5 or higher in the 1064nm wavelength during operation, service, or repair of the system. Do not attempt to repair the system without the consent or supervision of NEXPERTRUM Laser Division’s personnel. Do not expose skin to the marking area during operation.** Proper use and care of the system is critical for the general safety of people in the surrounding area.

2. We strongly recommend that the laser system be operated in a separated, interlocked working area. **This is required for CLASS IV systems.**

3. **Do not operate the laser system without constant supervision of the marking process.** Exposure to the laser beam may cause ignition of combustible materials. A properly maintained fire extinguisher should be kept on hand at all times.

4. Operation and care of the laser system must be performed in accordance with this manual.

5. Dangerous voltages and currents are present within the electronics and laser enclosures of the system. Access to these areas is not allowed at any time except by factory trained technicians.

6. The marking process may generate toxic fumes or particles. It is suggested that the laser marking system be operated with a proper exhaust system. Contact NEXPERTRUM Laser Division for further Information.

The laser system is specifically designed to comply with the FDA’s CDRH (Center for Devices and Radiological Health) performance requirements under 21 CFR 1040.10. Please contact NEXPERTRUM Laser Division regarding any questions concerning laser safety before operating the system.
Safety Labels

The CDRH requires that appropriate safety labels be attached to all interlocked and non-interlocked covers that allow access to a laser beam. The purpose of these labels is to warn personnel prior to the removal of the covers. Additional labels are also attached inside of the systems so that they are visible after the covers are removed. Certification/Identification labels, indicating manufacturer’s name, date of manufacture, description of the product, model number, serial number, and compliance statement, must also be affixed to the systems.

NEXPERTRUM Laser Division conforms to the CDRH regulations by affixing the proper safety labels to all manufactured systems. **Do not remove the labels.** If for any reason the labels are removed or destroyed, notify NEXPERTRUM Laser Division or your NEXPERTRUM Laser Division representative.

- Product ID & Warranty Label – Resonator
  - Location: Resonator
    - Back next to connection socket

- Danger Warning Logotype – Resonator
  - Location: Resonator cover both sides of marking head, upper-center area on the scanhead cover.
• Defeatably-Interlocked Protective Housing Label
  • Location: Resonator cover
    o Both sides under Danger logotype label.

• Aperture Label
  • Location: Scanhead
    o On sides of F-theta lens socket.

• Laser warning sign
  • Location: Scanhead
    o Front center.
Safety Warning Symbols and Definitions

- Caution, danger, or seriousness

- Caution – High voltage

- Eye protection with specified optical density required

- Customer repair, disassembly, or alteration forbidden

- Do not place hands in marking area when laser is on as it may result in skin burns.
Packaging Contents

The CHAMELEON laser marking system is shipped in one box; with the marking head and the laser controller.

The box with the marking head
(1) Marking scan head 1

The box with the laser controller
(1) Laser Controller 1
(2) NeXmark software & Driver with manuals 1
(3) D-Sub 15pin connector 1
(4) D-sub 9pin connector 1
(5) D-sub-17W2 connector. 1
(6) Standard F-theta lens(100mm or 160mm) 1
(7) Green License Key (USB) 1

Note: An NEXPECTRUM Laser Division service technician will install the first system shipped to each customer. Please do not try to unpack or set up the system; NEXPECTRUM Laser Division will not guarantee optimal operation under such circumstances.
Chameleon crystal Laser Marking System

System Overview

Features

Diode Pumped Solid State Laser (DPSSL)

- The CHAMELEON uses a Laser Diode to pump a resonator cavity, which emits laser light at a wavelength of 1064 nm (near IR). The light is then focused and steered by the marking system to mark on various types materials. The marking occurs by thermal excitation, absorption of the light, by the substrate either by ablating the surface or an induced chemical reaction leading to a sharp contrast between the marked area and the material being marked.

- The Laser Diode output is single chip solid-state Laser, which is mounted inside of the resonator. The DPSS Laser provides a consistent power level over extended periods of time. Unlike conventional flash lamp laser systems, it greatly reduces maintenance costs and time.

- The CHAMELEON features a factory-sealed Laser cavity design, which eliminates the possibility of internal optics contamination in a dusty or humid environment, and drastically prolongs the life of the system.

Microprocessor Controlled

- The Proprietary CPU inside the controller controls the operation of the DPSS Laser.
- The CHAMELEON offers expanded automation operation capabilities via simple software interface and / or digital I/O port to ease its integration into an industrial or OEM environment.

Air Cooled

- Thermoelectric cooling eliminates the need for external cooling. A highly efficient heat management system provides stable power output over a wide range of ambient temperatures.
Installation and Connection

NEXPECTRUM Laser Division personnel will perform initial installation and connection.

Installation

- Place the stand for the marking head on a level surface.
- Place the marking head of the CHAMELEON onto its stand.
- Secure marking head to stand using M5-bolts and lock washers. Bolts should be finger tight plus a 1/4 turn.
- Connect the power cords from the AC inlet on the controller and marker to an appropriate AC outlet. For areas other than South Korea, the customer is responsible for providing the necessary power cords or adapters to meet the connection configuration on the AC outlet. The use of a surge protector is recommended.

Operating Environment

Before installing and operating the system, verify that the operating environment meets the following guidelines.

- Avoid places where the system may be exposed to high levels of vibration, humidity, electrical noise, dust, oil mist or other contaminants.
- The system is equipped with a thermoelectric cooling system. Although the system is fully functional within the temperature range of 10°C~35°C (50°F~95°F), it is recommended that the ambient operating temperature range remain between 16°C~24°C (61°F~75°F).
- To operate safely, properly ventilate the controller and marking head. Both the marker head and the controller require airflow to their panels. Insure that there is a minimum of 5cm (2”) open area around the marking head and the rear of the controller for proper air circulation. This space should also be maintained for accessibility to any operating controls on the rear panel of the controller and marker.
Exhaust
The CHAMELEON requires external exhaust if installed. A rigid duct should be used between the vacuum unit and the marking system. The exhaust tubing should be smooth-walled and have as few bends as possible. Use the duct with a diameter that matches the exhaust unit. Do not connect the rigid duct directly to the marking system. The blower vibrations can be isolated if a short piece of industrial-grade, wire-reinforced rubber tubing is used at the end of the duct.

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use with ventilator.</td>
</tr>
<tr>
<td>Toxic fumes may be generated when marking some materials.</td>
</tr>
</tbody>
</table>

Connection

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divide and maintain a separate, interlocked working area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use eye protection goggles.</td>
</tr>
<tr>
<td>Use eye protection goggles when using Class IV systems.</td>
</tr>
<tr>
<td>Wear eye protection with optical density of 5 or higher at appropriate wavelength.</td>
</tr>
</tbody>
</table>

1) Set the marking head and Laser controller on the work station.
   a) Verify that the distance between them are not over 2M
   b) Connect the power cable to the controller.
c) Connect the power cable of the marking head to a grounded surge protected power outlet.
d) Connect the Scanhead cable to controller. (D-sub 15pin connector black end)
e) Connect the Resonator cable to the controller with screw. (17W2 connector silver end)
f) Connect the other end of the Scanhead cable to marking head.
g) Connect the Resonator cable to the marking head.
h) Connect the Data cable from controller to marking head.

2) Set the PC on the table.
   a) Connect the electric connection for the PC.
   b) Connect the power cable to a grounded surge protected power outlet.

3) Insert the USB key on to the PC.

4) Connect the USB cable from the controller to PC.
Operation

The CHAMELEON is composed of the marking head, laser diode controller and a personal computer (marking software: NeXMark).

- Beam path alignment is factory set. An NEXPERTUM Laser Division factory trained laser technician should perform any further alignment of the beam path if it is necessary.

CAUTION – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Hardware driver installation

Step 1  Make sure all the cables and power are properly connected as page. 9. Turn on the PC
Step 2  Check the PC if license key(USB) and USB port from controller is connected with computer.
Step 3  Open “Device Manager” from control panel or access by right clicking my computer and entering “Property”
Step 4  Switch on the controller. (Red) Check and see if unknown device appear.
Step 5  Right click unknown device and press update.
Step 6  Press manually select update file. And select LMC driver Supplied by NeXpectrum Division.
Step 7  Select “continue with installation” when warning message appears.
Step 8  For windows XP, Step 6, 7, have to be repeated one more time.
Step 9  Run “Dongle.exe” for license key registration. Run NeXmark software.

NOTE: Using Windows 7 environment, may not run properly as software interface were developed in XP environment. This could be resolved by entering property of NeXmark2.exe and change the compatibility to XP service pack 2.

Flow of Operation

Step 1  Turn on power. Before turning on power, make sure that the cables are properly connected and the cap of F-theta lens is removed.
Step 2  Setting the focal length of the beam
Step 3  Set the LD current by turning a nozzle from Controller.
Step 4  Create the marking image with NeXmark. (See NeXmark User’s Manual for details)
Step 5    Set marking parameters with NeXmark  
(See NeXmark User’s Manual for details)

Step 6    Mark object  
(See NeXmark User’s Manual for details)

**Power ON/OFF**

The CHAMELEON is composed of a marking head, laser diode controller and a personal computer, each with a power switch. Please turn the power ON and OFF, according to the following procedure.

**Power ON**

Step 1 Turn the computer ON.
Step 2 Insert USB Key into the PC and see red light turns on.
Step 3 Turn the controller ON. The switch is located on the front panel (red). Check scanhead if two green light turns on.
Step 4 Run NeXmark.
Step 5 Check if there are any error message appear on software screen
Step 6 Press laser “ON” button to turn on the power to laser.
Step 7 Turn to nozzle and set the power range above 60.

**Note:** Please allow the system to warm-up. If the system is operated without warm-up, it may cause accelerated deterioration to the marking quality and to the internal components of the marking system.

**Power OFF**

Step 1 Make sure turn the power nozzle all the way down before turning off the power.
Step 2 Close NeXmark, then close Windows, and turn the computer off.

**Recovery from Unexpected Shutdown**

In the event of a power failure, turn OFF all power switches, and restart the system using Power ON procedures.

**Setting the Focal Length of the Beam**

In order to produce quality marking, the distance between the edge of the lens and the item to be marked (work distance) should be optimal. The focal point for a 100mm F-theta lens can be found approximately 100mm from the edge of the lens. The focal point for a 160mm F-theta lens can be found approximately 160mm from the edge of the lens and so on.

Step 1 Prepare a sample piece. Place the sample on the marking platform. The height of the sample should be the same as the actual piece to be marked.
Step 2 Turn ON the power of the marker. Power should be turned on according to the procedure described in “Power ON/OFF” on page 10.
Step 3 Run NeXmark software.
Step 4 Create an circle object and put to center on NeXmark screen; Check continuous marking and press mark.
Step 5  Move the sample up and down to find the point where the laser beam is the brightest and sound emitted is the loudest. The height is now set at the optimal work distance.

Operating the Controller

Features

- The main function of the Controller is to power the LD (Laser Diode) and transfer the laser output to the Marking Head through the optic cable.

- The Controller programming tracks the temperature of the LD and crystal installed in the Marker Head. Thermoelectric cooling modules control the temperature of the LD and crystal ensuring stable marking power.

Functions on the Front Panel

Main power: Supply main power to both controller and marking head by switching “ON”

Laser On: Even after power is being supplied to controller, it will not supply power to LD unless pressing this button. (Only used in NXP-4W-III)

Temperature: Shows current temperature of LD. This could be control by GAIN nozzle on the right.

Gain: Control heating and cooling for LD and by increasing, more cooling. (Only used in NXP-4W-III)
## Maintenance

### Maintenance and Inspection

When maintaining and inspecting the system, please pay attention to the following:

- Please turn the system off. If the maintenance is done immediately after the using the system, make sure the surrounding temperature around the working field is safe.
- Do not do attempt operations not specified in this manual.
- The frequency of replacing maintenance parts and the cycle of inspection depend on the system requirements, the types of applications, and the frequency of usage.

### Laser Diode Replacement

Please contact factory for replacement of Laser Diode in order to maximize performance of the system.

### Inspection

Please inspect the following items regularly to make sure that the system runs at its peak performance level.

<table>
<thead>
<tr>
<th>Items</th>
<th>Inspection</th>
<th>Equipment for inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient humidity/temperature</td>
<td>Measure the surrounding temperature and make sure that it is in the range of specifications temperature humidity</td>
<td>Thermometer/Hydrometer</td>
</tr>
<tr>
<td>State of installation</td>
<td>No excessive vibration at the Marker Head.</td>
<td></td>
</tr>
<tr>
<td>Cleaning</td>
<td>There is no dust on and around devices.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>There is no dirt on the cover glass of F-Theta lens.</td>
<td>Lens tissue for maintenance. Methyl alcohol or Isopropyl alcohol.</td>
</tr>
</tbody>
</table>

**NOTE 1:** Required temperature is 10℃~35℃
**NOTE 2:** Maximum humidity is 70% non-condensing.
**NOTE 3:** If the laser is exposed to excess dust, optical parts may become damaged by dirt burnt with the laser beam.
Cleaning

General cleaning of Laser Marker System
Basic cleaning of the system should be conducted on a daily basis. Dirt, debris, and other build up may cause inaccurate operation and malfunction of the system. The marking system is composed of sensitive optical and mechanical parts that are crucial for marking performance. Even minor damage to one or several of these parts may jeopardize the performance of the entire system.

Note: The frequency of cleaning depends on the number of operations and the types of materials being marked. Consequently, increased use of the system and materials with higher levels of particles will require more cleaning. Inspect the system and its applications to determine proper cleaning cycles. Keep your investment clean and well maintained.

The Process of Cleaning
1. Make sure to turn the system off and disconnect all power cables before cleaning.
2. Thoroughly remove loose debris and vacuum the inner part of the working field.
3. Use a soft cloth to clean the working field. Do not spray the solution directly into the working field to prevent the electrical components from being exposed to the liquid.

Cleaning the F-Theta Lens
Inspection of the F-Theta lens should be conducted regularly. Before cleaning, make sure to turn off and disconnect the AC input cable. Cleaning should be performed as follows:
1. Remove the lens cap.
2. Clean the F-Theta lens while installed in the marking head. Notice: Do not remove the F-Theta lens from the marking head!
3. Clean with methyl alcohol or isopropyl alcohol and a lens cleaning tissue.

Note:
• Use tweezers and lens tissue for hard-to-reach spots.
• Make sure to wipe in one direction to avoid adhesion of dust and scratching of the lens surface. Do not wipe in both directions.
• Keep the lens protected by securing the lens cover over the lens when the system is not in use. Notice: Be sure to remove the lens cover prior to operation.

Cleaning the Marker Head
Before cleaning, make sure to turn the power off and disconnect the AC input cable.

Clean the cover of the marker head with lint-free cloths and a mild detergent. Do not use liquid detergent that is highly concentrated. To avoid electrical problems, keep the liquid away from laser maker system.
**DANGER**

**Do not disassemble, repair, or remodel this device.**
Potential electric shock and fire hazards exist.
Do not perform any maintenance other than those specified in this manual.

---

**CAUTION**

**Do not open the panel.**
Potential for electric shock exists. Components with high voltage exist inside.
Do not open the panel except when replacing fuse.
## Specifications and Dimensions

### Specification (TYP value)

<table>
<thead>
<tr>
<th>Items</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td>CHAMELEON Series</td>
</tr>
<tr>
<td><strong>Marker Head</strong></td>
<td></td>
</tr>
<tr>
<td>Laser source</td>
<td>Semiconductor pumping Nd:YVO4</td>
</tr>
<tr>
<td>Beam wavelength</td>
<td>1.064 nm</td>
</tr>
<tr>
<td>Laser Output</td>
<td>8W (CW: Continuous Wave)</td>
</tr>
<tr>
<td>Peak Power*</td>
<td>60kW @ 10kHz</td>
</tr>
<tr>
<td>Q-switch pulse width*</td>
<td>6nsec @ 10kHz</td>
</tr>
<tr>
<td>Beam spot diameter</td>
<td>25 ~ 40 μm</td>
</tr>
<tr>
<td>Max marking area</td>
<td>70mm x 70 mm, 110x110, 185x185</td>
</tr>
<tr>
<td>F-Theta Lens (Focal Length)</td>
<td>100mm, 160mm, 254mm,</td>
</tr>
<tr>
<td>Cooling system.</td>
<td>Electronic cooling, Air cooling</td>
</tr>
<tr>
<td>Operational temperature range</td>
<td>10~35°C Celsius</td>
</tr>
<tr>
<td>Operational humidity range*</td>
<td>70% non condensing</td>
</tr>
<tr>
<td>Consumption power</td>
<td>Max 400W</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 13kg</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Refer to the dimension drawing</td>
</tr>
<tr>
<td><strong>Controller</strong></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>NXP-III-C</td>
</tr>
<tr>
<td>Setting</td>
<td>Front panel key pad</td>
</tr>
<tr>
<td>Operational temperature range</td>
<td>10~35°C Celsius</td>
</tr>
<tr>
<td>Operational humidity range*</td>
<td>70% non condensing</td>
</tr>
<tr>
<td>Power source</td>
<td>AC 220, 10A, 50/60Hz</td>
</tr>
<tr>
<td>Consumption power</td>
<td>Max 600W</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 12kg</td>
</tr>
<tr>
<td>Dimensions</td>
<td>3U</td>
</tr>
</tbody>
</table>

*Units stated at maximum output parameters

### Environmental / Operating Conditions

- The unit is for indoor use only.
- The unit is for use at a maximum altitude of 3000 meters.
- The unit is for use within the ambient temperature range of 10°C and 35°C.
- The unit is for use at a maximum relative humidity of 70% for temperatures up to 24°C, decreasing linearly to 50% relative humidity at 35°C.
• The Mains supply voltage fluctuation shall not exceed +/- 10%.
• The unit is intended for INSTALLATION CATEGORY II.
• The unit is intended for use in a POLLUTION DEGREE 2 ENVIRONMENT.
Dimensions

Marking Head: Type CHAMELEON

Units – millimeters
External I/O connection

<table>
<thead>
<tr>
<th>PIN No.</th>
<th>Signals</th>
<th>Illustrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>S45GND</td>
<td>Cathode of common input signals 4 and 5.</td>
</tr>
<tr>
<td>2, 9</td>
<td>SGIN4, SGIN5</td>
<td>Anode of common input signals 4 and 5. With an internal current-limited resistance of 330 Ω. External current-limited resistance is suggested if voltage is over 12V.</td>
</tr>
<tr>
<td>3, 11</td>
<td>SGIN6, SGIN7</td>
<td>Anode of common input signals 6 and 7. With an internal current-limited resistance of 330 Ω. External current-limited resistance is suggested if voltage is over 12V. Please see “TN9 Connection Illustration”.</td>
</tr>
<tr>
<td>4, 12</td>
<td>YDIR+/YDIR-</td>
<td>Direction signal of extend axis Y (step motor or servo motor). The output can be set as differential output or level output (TTL output). This is an output signal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5</td>
<td>VCC</td>
<td>5V power supply output of control card, with GND signal (pin8) as reference Ground.</td>
</tr>
<tr>
<td>6, 13</td>
<td>YPUL+/YPUL-</td>
<td>Pulse signal of extend axis X (step motor or servo motor). The output can be set as differential output or level output (TTL output). This is an output signal.</td>
</tr>
<tr>
<td>7, 14</td>
<td>OUT4, OUT5, OUT6</td>
<td>Common output signals 1~3. With GND signal (pin8) as reference Ground. This is an output signal.</td>
</tr>
<tr>
<td>8</td>
<td>GND</td>
<td>Ground signal. Reference Ground of pin5, 7, 14, 15.</td>
</tr>
<tr>
<td>10</td>
<td>S67GND</td>
<td>Cathode of common input signals 6 and 7.</td>
</tr>
</tbody>
</table>
# Troubleshooting

<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>POSSIBLE CAUSES</th>
<th>SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit does not appear to have power</td>
<td>Unit not plugged in, improper connections, unit not turned on</td>
<td>Ensure that all power cords are properly attached and plugged into a functional electrical outlet. Ensure that the key switch on the front of the controller is in the ‘on’ position. Ensure that the on/off switches on the front of the controller and rear of the marker are in the ‘on’ position.</td>
</tr>
<tr>
<td>Unit appears to have power but does not respond to laptop commands</td>
<td>Improper connections, F-Theta lens cap in place, laser not turned on</td>
<td>Ensure all cables are properly attached between computer, controller and marker (see Cable Connection Chart on page 14). Ensure that the F-Theta lens cap has been removed from the bottom of the marker. Ensure the ‘Run-Stop’ button has been depressed on the front of the controller and the ‘Laser On’ light is illuminated.</td>
</tr>
<tr>
<td>Unit does not engrave</td>
<td>Improper focal distance, improper work piece positioning, loose cable connection.</td>
<td>Ensure that the surface of the work piece to be engraved is positioned in the focal plane of the laser and that the work piece itself is located in the engraving field (see section on adjusting focal plane and using the positioning diode option in NeXmark). Check cable connection</td>
</tr>
<tr>
<td>Unit engravest with poor quality</td>
<td>Improper work piece positioning, improper marking parameters, improper work piece material</td>
<td>Ensure that the surface of the work piece to be engraved is positioned in the focal plane of the laser and is parallel to the bottom of the marker (ie. flat). Experiment with the controller current and various marking parameters in NeXmark to obtain the highest quality mark. Ensure that the laser is able to engrave on the work piece material (try engraving the desired mark on a different material).</td>
</tr>
<tr>
<td>Unit will not engrave or engraves with poor quality</td>
<td>Defective, damaged or misaligned unit Software setting is incorrect.</td>
<td>If none of the previously outlined solutions corrects the experienced problem(s) then please contact NEXPACTRUM-Laser customer service personnel.</td>
</tr>
</tbody>
</table>
Warranty

NEXPECTRUM Laser Division warrants all products manufactured by NEXPECTRUM Laser Division to be free from defect in material and workmanship for a period of one (1) year from the date of purchase and (2) year for laser diode part. Such warranty includes all parts and labor. NEXPECTRUM Laser Division will pass through to the purchaser any warranties issued by the original manufacturer. If the original manufacturer agrees to replace or repair the defective part(s), NEXPECTRUM Laser Division will refit such part(s) at applicable charge. Only after approval and assignment of a Return Material Authorization (RMA), products repaired under this warranty are to be returned to NEXPECTRUM Laser Division, in the original packaging, shipping charges prepaid, by the user who assumes all risk and cost of shipping to and from NEXPECTRUM Laser Division’s facility.

For defective products, other than those covered by above, examination shall be made to disclose any defect to NEXPECTRUM Laser Division’s satisfaction and proof that the product was defective at the time of shipment. NEXPECTRUM Laser Division must receive immediate written notice upon discovery of such alleged defect and the alleged defective products must be returned to NEXPECTRUM Laser Division no later than 30 days after NEXPECTRUM Laser Division has issued an RMA Number. NEXPECTRUM Laser Division will repair or replace the product at its discretion. This warranty shall not apply to any products that have been used other than for their intended purpose, or to any of the products whose composition have been changed in any way, to parts requiring standard maintenance, or to any of the products which have been subjected to, but not limited to, adverse storage conditions, misuse, negligence, or accident.

NEXPECTRUM Laser Division shall not be held liable for damages or delays caused by defective raw materials and manufacture, nor shall NEXPECTRUM Laser Division be liable for consequential damages in cases of failure to meet the conditions of warranty. The full liability of NEXPECTRUM Laser Division under this clause is the repair or replacement of defective parts, solely at its discretion.

The customer is responsible for the proper installation and operation of the equipment. A factory representative will be available at start-up for a nominal fee. Contact your NEXPECTRUM Laser Division representative for further information.

THIS EXPRESS WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES. ALL OTHER WARRANTIES, AND ESPECIALLY, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES, ARE EXCLUDED.

No person, agent, or representative of NEXPECTRUM Laser Division is authorized to give any other warranties on NEXPECTRUM Laser Division’s behalf, or to assume any other liability in connection with any of the products.
NOTE: Proper use and/or storage of the system must conform to the following criteria or the warranty is voided:

- Avoid places where the system may be exposed to high levels of vibration, humidity, electrical noise, dust, or oil mist.
- Keep in an area with an ambient operating range between 10°C~35°C.
- For safety purposes, proper ventilation of the controller and the marking head is required. Both the marker head and the controller require airflow to their rear panels. Insure that there is a minimum of 5cm (2”) open area around the marking head and the rear of the controller for proper air circulation. This space should also be maintained for accessibility to any operating controls on the rear panel of the controller and marker.

WARNING - Any modification, alteration, opening or other changes to NEXPECTRUM Laser Division's products will void any warranties and could cause damage or injury to the user of the products. NEXPECTRUM Laser Division will not be held liable for consequential damages arising from any misuse of their products. In line with our policy of continuous product development, NEXPECTRUM Laser Division reserves the right to amend specifications and/or prices without prior notice.

This warranty shall constitute the exclusive remedy available to the user and shall be considered a condition of sale and use.

Purchasing company: ________________________________

Purchasing representative’s name: ___________________ Title: ______________

Signature: _______________________________ Date: ______________

NEXPECTRUM Laser Division representative’s Name: ___________________ Title: ______________

Signature: _______________________________ Date: ______________