



User Manual

v1.1

2025.10



SATURNA



Searching for Keywords

Search for keywords such as “filter” and “install” to find a topic. If you are using Adobe Acrobat Reader to read this document, press Ctrl+F on Windows or Command+F on Mac to begin a search.



Navigating to a Topic

View a complete list of topics in the table of contents. Click on a topic to navigate to that section.



Printing this Document

This document supports high resolution printing... But please consider the environment first!

Revision Log

Version	Date	Revisions
V1.1	2025.10	Updated links for support web pages.

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User Manual

Using this Manual

➤ Legend



Warning



Important



Hints and Tips



Reference

➤ Read Before Use

Familiarize yourself with the following before using Saturna:

1. Quick Start Guide
2. User Manual

It is recommended to watch all tutorial videos on the Ocean Diagnostics website and read safety guidelines before using Saturna for the first time. Prepare for your first analysis by reviewing the quick start guide and refer to this user manual for more information.

➤ Quick Start Guide

Go to the address below or scan the QR code to watch the Saturna quick start video, which demonstrates how to use the Saturna Imaging System.

<https://youtu.be/0fmtl413kO8?si=uNmndMvxYC0UAQVt>



➤ Video Tutorials

Go to the address below or scan the QR code to watch the Saturna tutorial video, which demonstrates how to use the Saturna Imaging System.

https://youtu.be/08ts2g9uU_0?si=4g1rP9cVE0nAJI9y



- URLs may change over time. Contact info@oceandiagnostics.com if you are unable to view the video tutorial.

Welcome to the Team!

Thank you for purchasing the Saturna Imaging System, a tool to rapidly automate and standardize particle measuring and imaging. The Saturna Imaging System uses advanced technology to capture particle images and utilizes AI-based learning to analyze particle characteristics such as size, shape, colour and more. This system eliminates the need to manually measure particles individually, which saves hours of laboratory time, reduces human error and standardizes analysis.

The Saturna Imaging System will automatically analyze particle physical characteristics and output a CSV (Comma Separated Values) file with thirteen distinct data points for every particle and corresponding particle image map. These data points describe the particles' characteristics.

➤ About this Guide

This manual is your go-to resource for using, maintaining, and troubleshooting your Saturna Imaging System. It is structured to help you quickly find the information you need - whether you're at home, in the lab, or out in the field. Inside, you'll find:

- A detailed overview of Saturna and its capabilities.
- A checklist of what's included in your kit.
- Important safety and handling precautions.
- Step-by-step instructions for setup and operation.
- Troubleshooting tips and support resources.

Please read through this manual before using the device for the first time. If you have any questions that are not covered here, our team is always happy to help - reach out at support@oceandiagnostics.com

Product Overview

➤ What is the Saturna Imaging System?

The Saturna Imaging System is a portable, standardized imaging and illumination device designed to streamline and automate the analysis of visible microplastic particles (i.e. particles > 400 µm). It connects to a Windows PC and works in tandem with a dedicated web-based (or Chrome app) analysis application. The system is intended for researchers, citizen scientists, community groups, and environmental monitoring programs that need reproducible, high-throughput quantification of microplastic samples. Packaged in a Nanuk 904 weather-proof case lined with custom foam cutouts, the Saturna body, background sheet, shroud, and USB cable travel safely wherever your work takes you.

➤ Key Features

- **Particle Size Range** - Designed for visible microplastics larger than 400 µm.
- **Imaging Sensor** - 8 MP Sony IMX179 CMOS sensor.
- **Illumination** - ~4000 K neutral white LED array, built-in, combined with a light-blocking shroud to minimize external lighting interference.
- **Reference/Calibration** - Background sheet with QR code sizing reference to calibrate spatial measurements.
- **Data metrics (per particle)** - Maximum Width (mm), 2D Surface Area (mm²), Convex Surface Area (mm²), Perimeter (mm), Convex Perimeter (mm), Circular Equivalent Diameter (CED), Bounding Box Width & Height (mm), Aspect Ratio, Circularity, Solidity, Average HSV Colour Value, Average BGR Colour Value.
- **Analysis Software/Application** - Standalone web/Chrome App (offline or online) with functions: ROI selection, particle size filtering, metadata tagging, histograms, sortable tables, .CSV export, persistent settings.
- **Compatibility/System Requirements** - Windows 11 PC or laptop with USB Type-A port; broadband internet (for online mode).
- **Portability/Housing** - Waterproof hard case included (dimensions: 26 cm × 20 cm × 12 cm).
- **Intended Use Cases** - Marine or freshwater microplastic sampling (manta trawls, Neuston nets) | Beach quadrat / shoreline surveys | Ingestion / biological studies | Community science / educational projects.
- **Standardization/Reproducibility** - The built-in lighting, sizing reference, and controlled imaging environment help ensure consistency across measurements.

➤ Kit Contents

Item	Specifications
	Saturna Imaging System Camera and Tripod Integrated 8MP Sony IMX179 CMOS imaging sensor for high resolution data Integrated ~4000k neutral white LED array for highly standardized particle images with consistent lighting for comparative size and colour analysis across time, location and external lighting conditions Captures visible particles ($>400\ \mu\text{m}$)
	Type A USB cable Requirements: Windows 10 operating system
	Shroud (cover) Light-blocking shroud to provide highly standardized particle images with consistent lighting for comparative size and colour analysis across time, location and external lighting conditions
	Background Sheet Included QR Code background sheet provides accurate particle sizing reference for physical analysis computer vision algorithms Dark and light colours provide appropriate contrast (See Instructions)
	Hard Case Waterproof hard case included for easy transport into the field (26cm x 20cm x 12cm)



- Do not get Saturna wet: Saturna is not designed for water immersion or splashing.
 - Be cautious with the USB cable: The USB cable is a critical component of the camera, used for transferring data. It is important to handle the USB cable with care and avoid excessively or forcefully bending it. Bending or twisting the USB cable beyond its recommended range can cause damage to the cable or the camera's USB port, resulting in connectivity issues.
 - Handle with care: Avoid dropping or mishandling the camera, as this can result in internal damage or scratches on the lens or body. When carrying or storing the camera, always use the protective case to prevent accidental bumps or impact.
 - Keep away from extreme temperatures: Saturna is sensitive to extreme temperatures. Avoid exposing Saturna to extreme heat or cold, as it can affect its performance and potentially damage internal components.
 - Clean properly: Only clean with a gentle microfiber cloth and lens cleaning solution. Avoid using harsh chemicals or abrasive materials that can scratch or damage the camera's surfaces.
 - Follow the user guide: Carefully read and follow this Saturna Imaging System 2023 manual.
 - By taking these precautions and handling Saturna with care, you can help ensure its optimal performance, longevity and reliability, allowing you to capture high-quality images and reliable data to make the most out of your imaging system.
-

Operations Guide

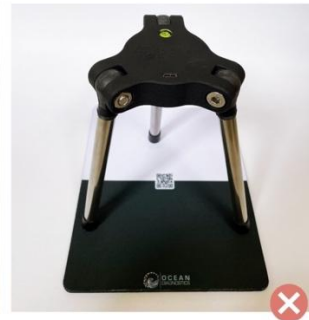
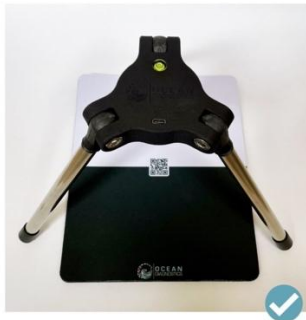
This section will walk you through the basic steps to set up and operate your Saturna Imaging System. Follow these instructions carefully to ensure proper use of your device.

➤ Dos and Don'ts

To ensure safe operation, avoid equipment damage, and maintain valid warranty coverage, please read and follow these warnings:

DESCRIPTION

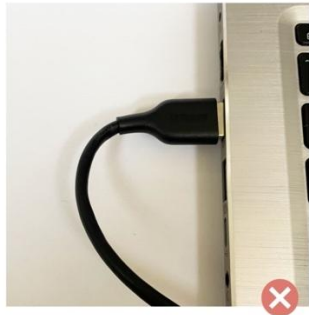
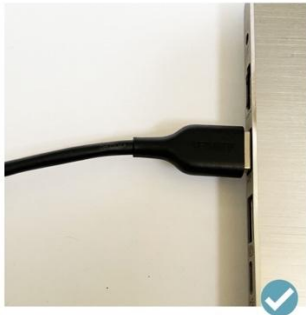
Position the legs of Saturna off the background sheet.



Do not image particles without shroud in place.



Use caution to ensure the USB cable is not excessively bent.



The Shroud, Saturna legs and the background tabletop should not be visible through the *Saturna Web Application*.



Particles should be carefully placed on the background sheet. Place light particles on the black half of the background sheet and dark particles on the light half to increase contrast.



Ensure the QR code is not covered.



All particles must be within view on the viewer panel. Particles outside of view will not be captured correctly.



Ensure particles do not overlap. If particles overlap, they will be detected as a single particle, which will lead to inaccurate results.



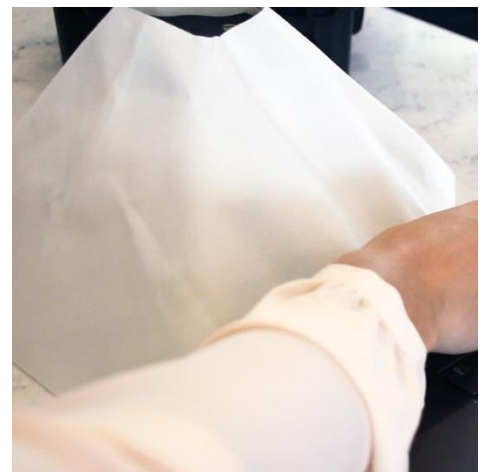
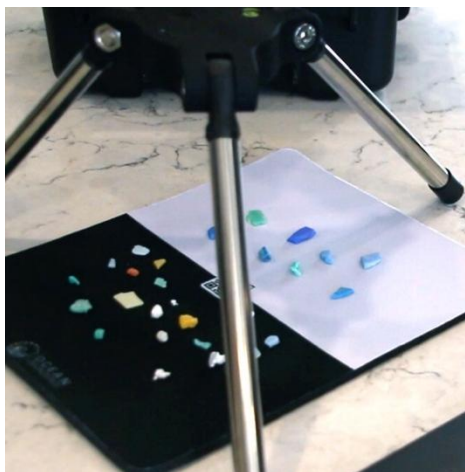
➤ Operating Instructions

STEP 1: Connect Saturna

1. Place particles on the background sheet.
 - a. Place light-coloured particles on the black half of the background sheet and dark-coloured particles on the white half.
 - b. Spread the particles out so they are not touching each other or overlapping.
 - c. Ensure particles do not cover the QR code in the middle.

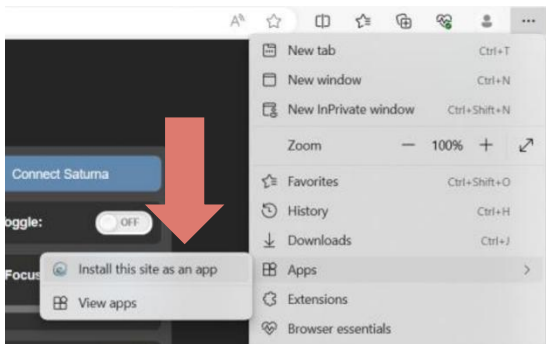


2. Take the *Saturna Imaging System* camera + tripod out of the protective box.
3. Remove the lens cap from the camera.
4. Place the *Saturna Imaging System* tripod over the background sheet with particles, aligning the camera directly over the QR code.
5. Place the shroud over the tripod.



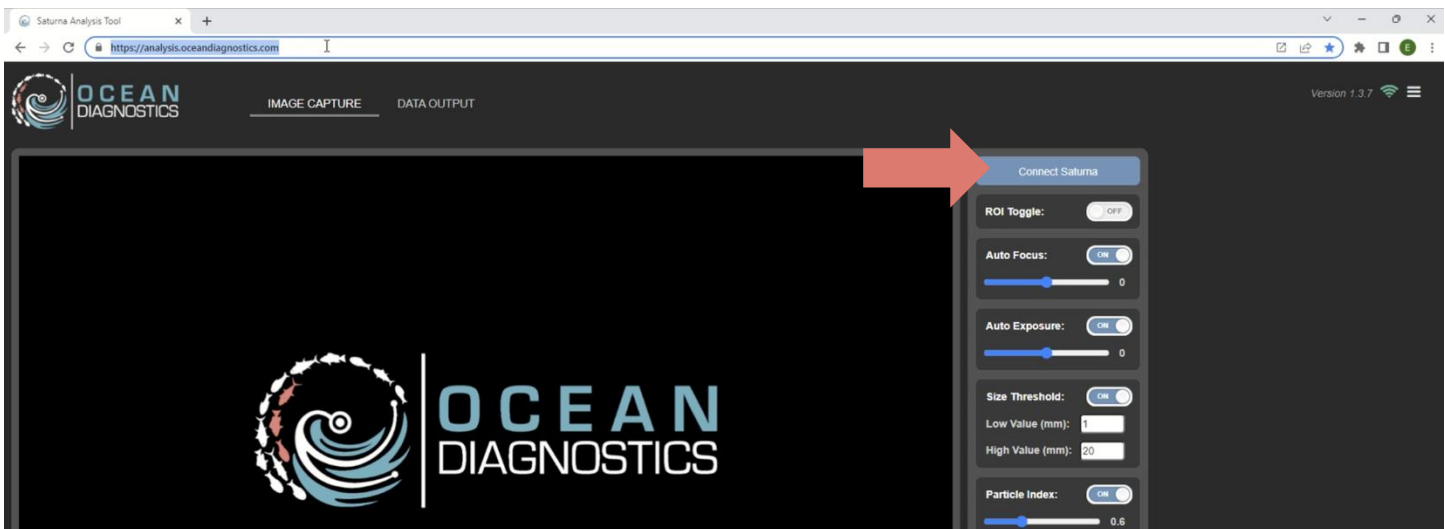
6. Open your **Windows PC** or **Chrome Book** computer.

- Open your internet browser to the *Saturna Imaging System* web application through the following web address: **analysis.oceandiagnostics.com**.



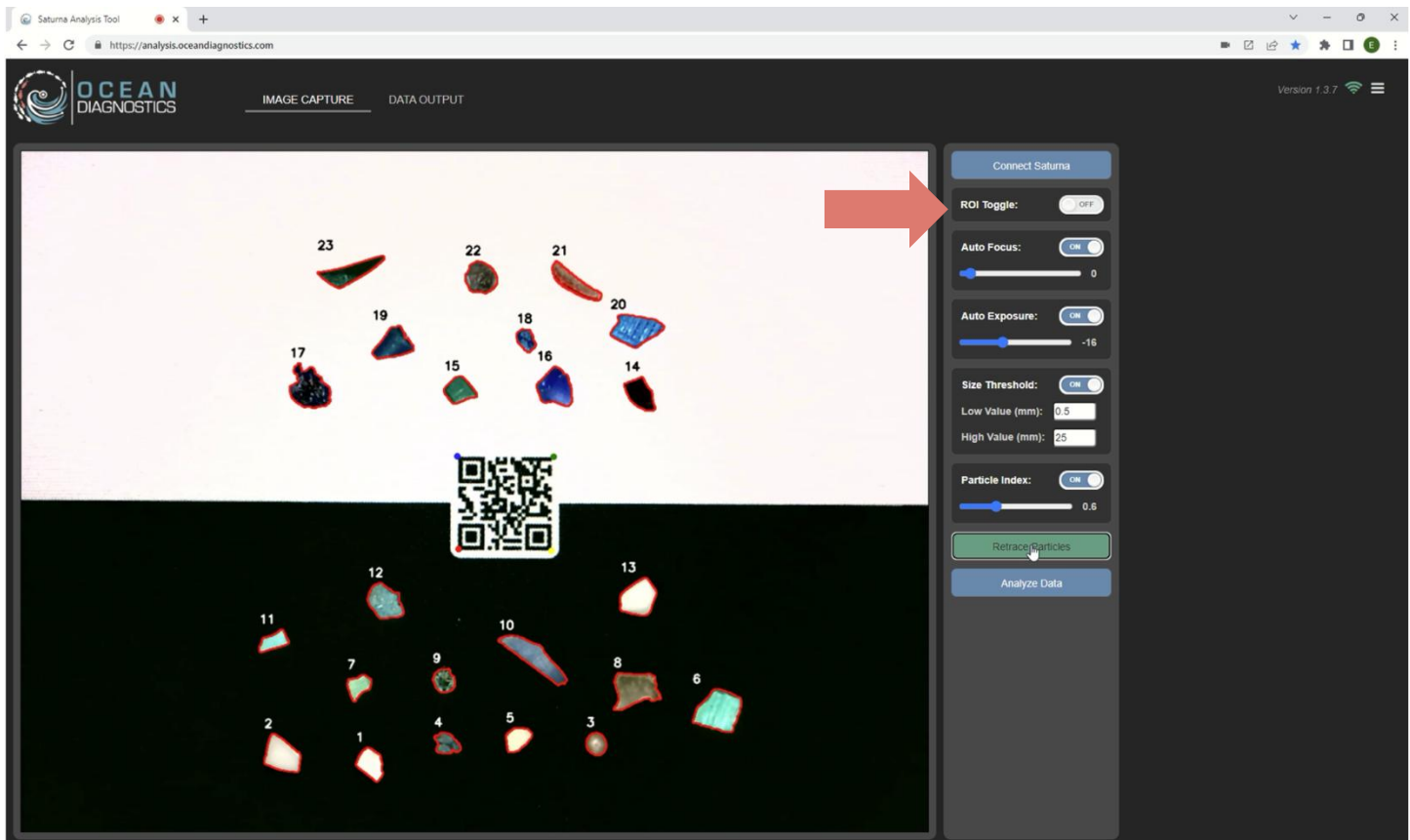
TIP: The *Saturna Imaging System* web application can be downloaded and used offline in Google Chrome if required. To do this, click **Install *Saturna Imaging System* Analysis Tool** in the URL line.

- Carefully hold the tripod and connect the cable from *Saturna Imaging System* to your computer.
- Click **Connect Saturna** on the web interface.

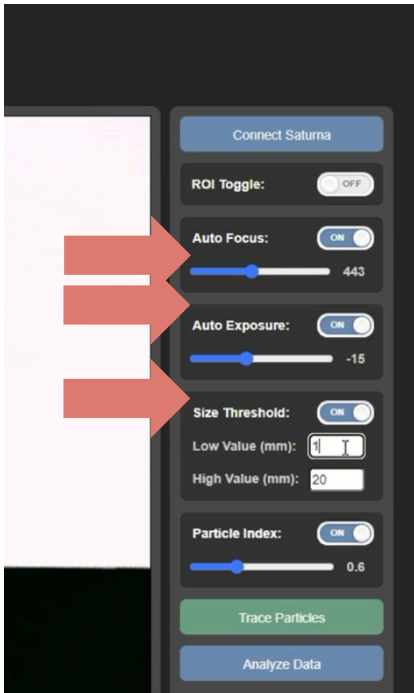


- The window viewer should show the background sheet and particles.
- Make sure only the background sheet is in view.
- Ensure the shroud and tripod legs are not in view.
- Click **Trace Particles** to automatically trace particles and capture data.
- Check to ensure all particles are traced with a red line. Nothing else (e.g., shadows or dust) should be traced with a red line. If there are issues, follow the troubleshooting steps below.

IMPORTANT: Data **will not be saved** until it is downloaded. Download the Image and Data files to your local computer by clicking the blue buttons **Image** and **Data** in the **Data Output** tab.



15. If particles are not tracing correctly, refer to these troubleshooting steps:
- Make sure only the background sheet is in view. Adjust the placement or height of the tripod sheet if needed.
 - Ensure the shroud and tripod legs are not in view.
 - If specific particles are not picked up on the white background sheet, move them to the black background sheet, and vice versa.
 - Click **Retrace**.



e. If you still pick up unintended particles, adjust threshold levels using the **Size Threshold**. The threshold levels determine the smallest and largest size of particles detected. If you are picking up small pieces like dust, change the low value to a higher number. For example, if you used a 1 mm sieve, adjust the low threshold to 1 mm.

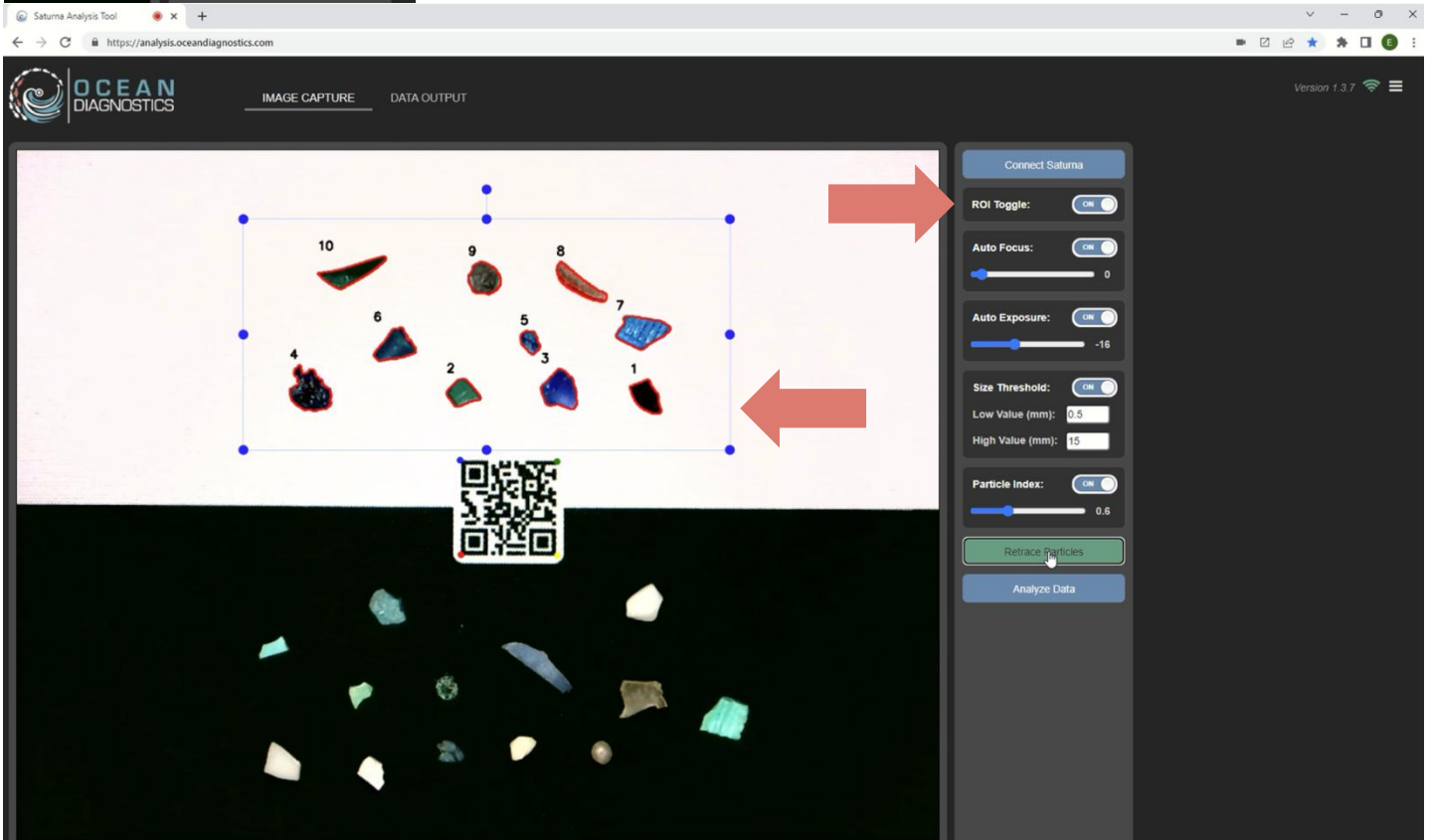
f. Click **Retrace**.

g. If you still pick up unintended particles, adjust the **Exposure** level. Move the exposure toggle until the brightness looks appropriate.

h. Click **Retrace**.

i. If you still pick up unintended particles, use the **ROI (Region of Interest)** tool to isolate just the particles you want to analyze. Click the ROI toggle and adjust the rectangle to the area you wish to image. Nothing outside of the rectangle will be imaged and analyzed.

j. Click **Retrace**.



STEP 2: Analyze Data

1. When particles are properly traced, press the blue **Analyze Data** button.
2. The results will automatically appear on the right-hand side of the web application.
3. The Index number identifies the particle being analyzed. It is labelled accordingly on the image (left) and dataset (right). The index number aligns with the label on the image, so you know which dataset (row of data) belongs to which particle.

Analysis Timestamp: 05-26-2023 | 16:42:59 (Local)

Index	Diameter	Perimeter	CVX Perim.	Area	CVX Area	CED	Length	Width	Aspect	Solidity	Circularity	RGB C
1	6.65	18.46	17.42	20.20	21.14	5.07	5.76	4.45	0.77	0.96	0.84	[2]
2	8.50	23.28	22.19	32.26	33.26	6.41	6.75	6.35	0.94	0.97	0.82	[2]
3	4.30	13.05	12.50	11.93	12.19	3.90	4.08	3.74	0.92	0.98	0.96	[1]
4	5.43	16.57	14.35	13.26	14.71	4.11	4.62	4.05	0.88	0.90	0.81	[5]
5	5.65	15.55	15.05	15.70	16.14	4.47	4.81	4.45	0.93	0.97	0.87	[2]
6	9.94	28.47	26.93	49.12	51.14	7.91	7.91	7.49	0.95	0.96	0.85	[9]
7	5.33	15.65	14.68	13.43	14.93	4.14	5.15	3.90	0.76	0.90	0.78	[1]
8	9.76	30.07	27.34	41.17	48.52	7.24	8.73	6.88	0.79	0.85	0.69	[1]
9	4.64	14.56	13.65	13.62	14.31	4.16	4.43	3.93	0.89	0.95	0.92	[5]
10	14.88	34.90	32.71	41.26	44.70	7.25	14.83	4.11	0.28	0.92	0.48	[9]
11	5.96	16.30	15.32	12.94	14.25	4.06	5.78	3.01	0.52	0.91	0.69	[1]

4. Add notes or categories using the tag function.
 - a. Select all particles you would like to apply a tag to. Refer to the index number in the image and the corresponding index number in the data rows. Click the checkbox to the left of the index number on the data table.
 - b. Click the tag icon.
 - c. Type the note or category in the text box.
 - d. Click **Add Tag**.
 - e. Repeat for all notes or categories.

Analysis Timestamp: 05-26-2023 | 16:42:59 (Local)

Index	Circularity	RGB Color	HSV Color	Tags
☐ 1	1.84	[225 223 210]	[52 6 88]	Fragment
☐ 2	1.82	[215 209 190]	[45 11 84]	Fragment
☐ 3	1.96	[139 129 99]	[45 28 54]	Pellet
☐ 4	1.81	[54 91 84]	[168 40 35]	Custom Tag
☒ 5	1.87	[222 218 180]	[54 18 87]	+
☒ 6	1.85	[93 210 182]	[165 55 82]	+
☒ 7	1.78	[132 189 146]	[134 30 74]	+
☒ 8	1.69	[119 112 78]	[49 34 46]	+
☐ 9	1.92	[64 100 76]	[140 36 39]	+
☒ 10	1.48	[91 122 137]	[199 33 53]	+
☐ 11	1.69	[115 202 185]	[168 43 79]	+

5. Explore the data by clicking the **Histogram** tab.
6. Download the Image and Data files to your local computer by clicking the blue buttons **Image** and **Data**.

Analysis Timestamp: 05-26-2023 | 16:42:59 (Local)

➤ Understanding the Data

To explore the different types of data collected with the *Saturna Imaging System*, explore the **Data Reference**.

1. Click the question mark on the Data Table or click the three-line toggle in the upper right corner of the *Saturn Web Application*.
2. In Data Reference, you can explore the definition and meaning of each data type.

The screenshot shows the Saturna Analysis Tool web application interface. On the left, there is a large image of a sample with numbered markers (1-23) and a QR code. On the right, the 'DATA TABLE' is displayed, showing a list of data points with columns for Index, Diameter, Perimeter, CVX Perim., Area, CVX Area, CED, Length, Width, Aspect, Solidity, Circularity, and RGB C. A red arrow points from the image area to the question mark icon in the top right corner of the Data Table, which is used to access the Data Reference.

Index	Diameter	Perimeter	CVX Perim.	Area	CVX Area	CED	Length	Width	Aspect	Solidity	Circularity	RGB C
18	4.52	12.91	12.32	10.49	10.97	3.65	4.25	3.22	0.76	0.96	0.87	[2]
3	4.30	13.05	12.50	11.93	12.19	3.90	4.08	3.74	0.92	0.98	0.96	[1]
9	4.64	14.56	13.65	13.62	14.31	4.16	4.43	3.93	0.89	0.95	0.92	[6]
5	5.65	15.55	15.05	15.70	16.14	4.47	4.81	4.45	0.93	0.97	0.87	[2]
7	5.33	15.65	14.68	13.43	14.93	4.14	5.15	3.90	0.76	0.90	0.78	[1]
11	5.96	16.30	15.32	12.94	14.25	4.06	5.78	3.01	0.52	0.91	0.69	[1]
4	5.43	16.57	14.35	13.26	14.71	4.11	4.62	4.05	0.88	0.90	0.81	[5]
15	6.27	17.71	17.03	19.66	20.33	5.00	5.35	4.76	0.89	0.97	0.85	[2]
1	6.65	18.46	17.42	20.20	21.14	5.07	5.76	4.45	0.77	0.96	0.84	[2]
14	7.36	19.88	18.86	22.34	23.58	5.33	6.72	4.47	0.66	0.95	0.79	[1]
22	6.24	19.91	18.77	26.34	27.27	5.79	6.13	5.70	0.93	0.97	0.94	[7]

Physical Analysis Metrics

The Saturna Analysis Tool was developed to interface with ODI's Saturna Imaging System to rapidly analyze the physical parameters of visible microplastic particles using standardized computer vision algorithms. The following documentation was developed to provide users with a complete understanding of the output metrics generated by the software system. Please select an output parameter from the dropdown below to learn more:

Diameter

Diameter is a size parameter that defines the maximum dimension of a particle along its entire perimeter. This metric can sometimes be referred to as Feret Diameter, Maximum Width, or Caliper Dimension.

- Diameter values are reported in millimeters (mm)
- The algorithm works by extracting all of the perimeter pixels of the particle and then running an optimized algorithm to find the two pixels in the set that have the greatest distance from one another in 2-dimensional space. The resulting maximum distance is converted to millimeters using a calibration transformation based on the QR code reference in the image



Exit

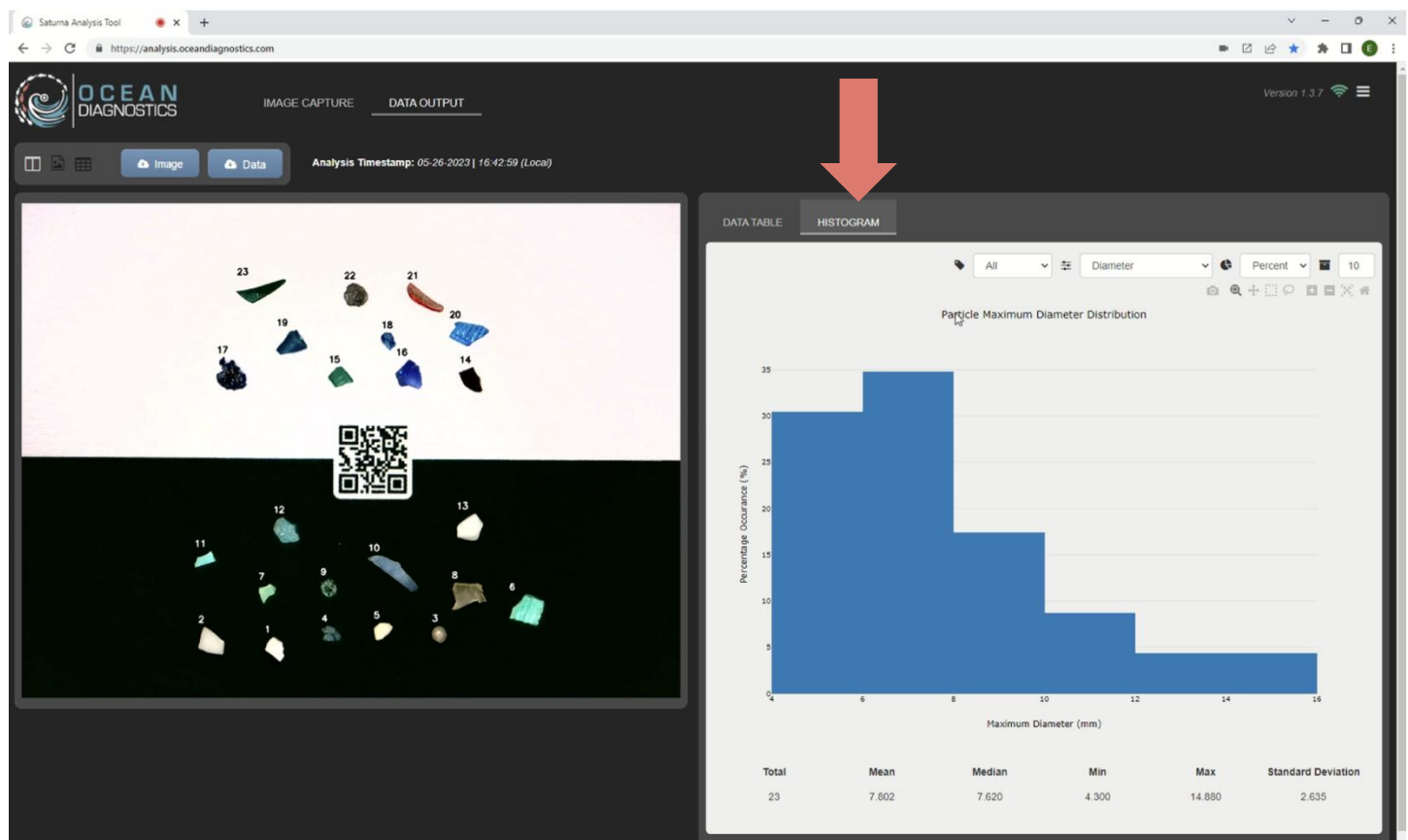
➤ Data Visualization

Within the Saturna Web Application, basic histograms can be created and some statistical measurements of the analyzed particles can be collected.

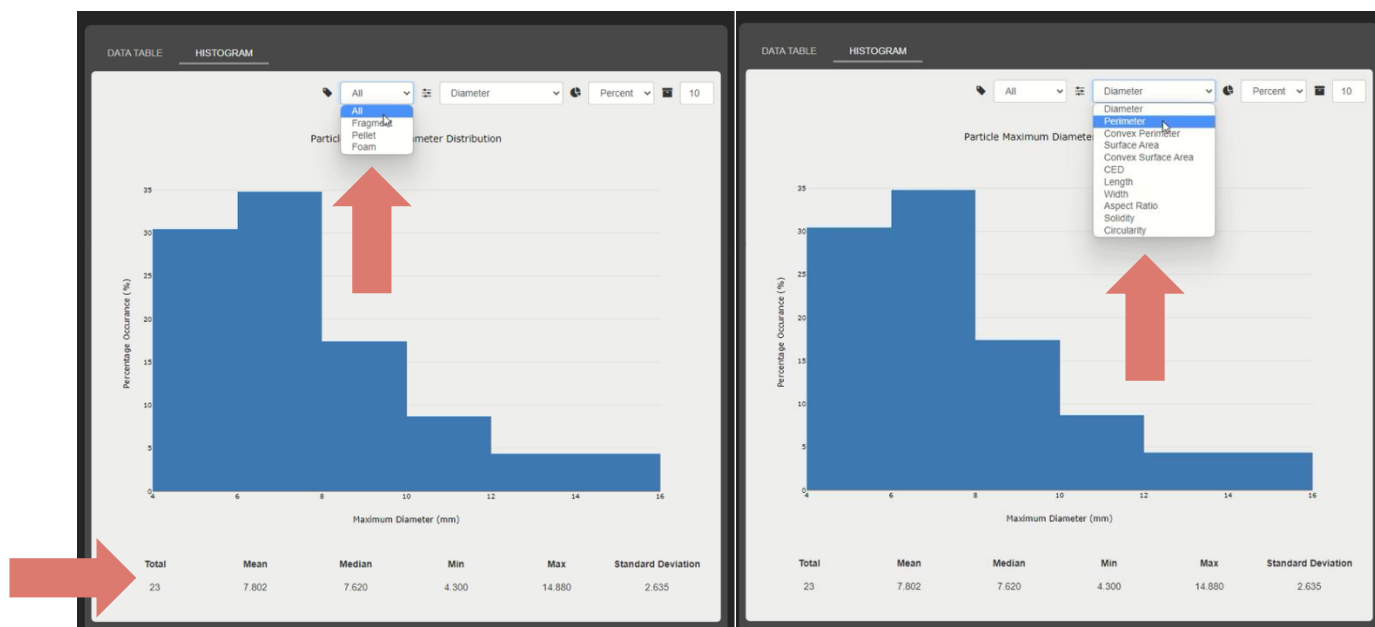
INSTRUCTIONS

1. To access this module, navigate to the **Histogram** tab above the data table after a group of particles has been analyzed.

Note: the plotting feature can only be used when connected to the internet.



- Sort by tag. Using the dropdown menu at the top of the panel, select the category/tags you would like to plot into a histogram.



- Sort by parameter. Using the dropdown menu at the top of the panel, select the parameter (e.g., perimeter, surface area, etc.) you would like to plot into a histogram.
- Sort by tag. Further sort the data by selecting a tag from the dropdown. The histogram will only be populated with data that have the specific tag applied.
- Customize your histogram. Adjust the bin number to change the width of bars in the histogram.
- Capture descriptive statistics, including mean, median, min, max and standard deviation. When a new size parameter is selected from the dropdown menu, the statistics for that distribution will automatically update underneath the plot.

➤ Frequently Asked Questions

What if the *Saturna Web Application* does not detect the *Saturna Camera*?

- Check to make sure that Saturna is plugged into a USB port of the computer and that the USB C cable that is being used is a *data* cable, not just a charging cable. We recommend using the cable provided with the kit. Saturna works best with the Google Chrome Internet Browser on either a Windows PC/Laptop or ChromeBook. Support on other browsers is intermittent or not fully supported at this time.

What if Saturna picks up shadows or dust?

- First, ensure that the background sheet is clean. If needed, use a lint roller to remove any debris from prior sessions. If the *Saturna Imaging System* is still picking up unintended particles, adjust the exposure settings. Increasing the exposure may help the system recognize only the particles you are interested in. You can also change the minimum threshold level to eliminate dust and other unwanted small particles or use the ROI tool as outlined in the *Saturna Imaging System 2023 Manual*.

What if Saturna does not read the QR code?

- Make sure the QR code is fully visible and is not obscured by any particles. Adjust the exposure settings as necessary to ensure that the code is clearly visible. If needed, unplug and re-plug the *Saturna Imaging System* to reset the device settings. Note that Saturna will not pick up the QR code as a particle. It is trained not to include the QR code as a particle. Four dots will appear when Saturna is connected to the computer, but they will not be traced or included in the data.

Why is Saturna not recognizing particles?

- Ensure that the particles do not overlap one another. Make sure that light-coloured or white particles are on the dark side of the background sheet and darker or black particles are on the white side of the background sheet. Adjust the exposure levels and the threshold as necessary to improve image clarity. If needed, unplug and re-plug the *Saturna Imaging System* to reset the device. Carefully follow the instructions in the *Saturna Imaging System 2023 Manual* carefully.

What should I do if I need to retrace the particles?

- Adjust exposure and threshold toggles if needed and be sure to click **Retrace Particles** any time you want to update the trace. Ensure all particles are visible by the camera. Saturna will automatically retrace all particles once the button is pressed.

How can I troubleshoot issues with the *Saturna Imaging System* if it still does not work properly?

- Step 1: Check to make sure everything is plugged in and you are using the correct device (Windows PC /Laptop or ChromeBook).
- Step 2: Unplug and re-plug Saturna in to reset the system.
- Step 3: Refresh the app using CTRL+R or by hitting the refresh button on the top of the browser page.
- Step 4: Adjust exposure levels.
- Step 5: Adjust threshold levels.
- Step 6: Use the ROI tool to isolate just the particles you want to analyze.
- Step 7: If all else fails, email support@oceandiagnostics.com for support.

What can I do if I need help understanding the data points generated by the *Saturna Imaging System*?

- Refer to the Data Reference from the three-line toggle in the top right corner of the *Saturna Web Application*. Explore each parameter through the drop-down menu to get more information about the analyses performed.

Can the system detect particles from diverse types of environmental samples (e.g., water, soil, air, ingested by animals)?

- The system can detect particles from different environments, but samples must be isolated from environmental matrices and cleaned of any biological material that can obscure the image. Saturna will analyze anything that is in the field of view without discriminating material type, so it is imperative that particles are first isolated before analyzing.

How long does it take to process a batch of samples?

- The process of tracing and analyzing particles should take less than a few minutes. When the data is generated by the app, images and data can be downloaded instantly.

Can I use Saturna without internet access?

- The *Saturna Web Application* is a Progressive Web App (PWA) and can be downloaded offline in the Chrome Browser by clicking the “Install App” button in the URL. The *Saturna Web Application* will then become available as a “Chrome App”, which can be accessed offline by clicking the “Apps” button in the top left of the Chrome Browser. In addition, a desktop shortcut can be created to launch the *Saturna Web Application* directly from the Windows OS.

What are the system requirements for the *Saturna Imaging System*?

- Saturna must be used with a Windows operating system (Windows PC / Laptop) or in ChromeOS on a ChromeBook with a device that has a USB port to connect the Saturna Imaging System. We recommend using the Google Chrome browser for best performance and reliability.

Are there any maintenance requirements for the *Saturna Imaging System*?

- Software updates to the *Saturna Web Application* are synced automatically and can be accessed by simply refreshing the page at any time. If using the app offline, you may wish to re-connect to the app online every couple of months to ensure you have the latest version or open a new <https://analysis.oceandiagnostics.com/> window every time you use Saturna to have the most up to date *Saturna Web Application* version. Software update logs can be viewed in the App by accessing the toggle menu in the top right and selecting **Update Log**.
- We highly recommend cleaning particles before placing them on the background sheet. The sheet can become dirty if particles are not cleaned and dry, which may affect analysis results and require the need to purchase a replacement background sheet over time. Cleaning and drying the particles ahead of analysis will help to prolong the life of the sheet.

How do I provide feedback on the product, such as reporting bugs or requesting new features?

- Product and software feedback have been integrated directly into the app. To report a bug, request a new feature, or to see what we are working on in our software pipeline, access the toggle menu in the top right of the app and select the **Feedback** button to launch the support form.

Warranty Policy

The following warranties are the official and sole warranties recognized by Ocean Diagnostics Inc. (ODI). If ODI equipment should be defective or fail to meet operational requirements, the customer's sole solution shall be repair or replacement by ODI or a directly authorized third-party instrument repair facility. Any repairs, which, in ODI's opinion, are required as a result of misuse, lack of routine maintenance, damage during installation, improper installation and use outside of specified operating conditions will not be covered. In no event will ODI be liable for any direct, indirect, consequential, or incidental damages including loss of profits or loss of savings, or any other damages resulting from any instrument or component defects resulting in the inability to use the instrument or components thereof.

To return products to ODI for repair or replacement under warranty, contact the ODI Customer Support Department at **support@oceandiagnostics.com** to diagnose an issue and request a Returned Material Authorization (RMA) form. All warranty claims must be completed promptly after defective nature is suspected and must be received by ODI within the applicable warranty periods outlined below. Warranty claims should clearly state the product Serial Number, Date of Purchase, and provide a full description of circumstances giving rise to the claim. All instruments, components, or products that are covered under warranty replacement become property of ODI after diagnostics are completed and a replacement is provided to the customer.

ODI reserves the right to make any changes in design or specifications on instruments without incurring any obligation to modify previously delivered instruments. Instrument manuals are produced for information and reference purposes and are subject to change without notice. A record of instrument manual changes will be recorded in a table at the top of this document.

➤ Saturna Imaging System

Ocean Diagnostics Inc. (ODI) warrants that the Saturna Imaging System is free from defects in materials and workmanship under normal use for a period of **ONE (1) YEAR (12 MONTHS)** from the date of shipment. During the warranty period, ODI will, at its discretion, repair or replace any components of the Saturna Imaging System that are deemed defective due to materials or workmanship, at no charge for parts or labor. This warranty only applies to instruments manufactured by ODI and purchased from ODI or an Authorized distributor. This warranty only applies to the original purchaser of a new instrument. Proof of purchase may be required for warranty service. This warranty does not include shipping charges to and from the customer.

Exclusions:

The following items are not covered under this warranty:

- Shipping charges to and from ODI, unless ODI has decided otherwise
- Damage caused by accident, misuse, abuse, or neglect
- Damage due to submersion, internal moisture, or improper storage of wet components
- Unauthorized repairs, modifications, or tampering by the user or third parties
- Opening the mechanical housing or removal/breaking of the warranty seal

If, after examining your equipment, our technicians and engineers determine that due to age or damage we cannot warranty any repairs you will be notified before any work is performed.

Water Resistance and Limitations

The Saturna Imaging System is not water-resistant. It must not be submerged or exposed to prolonged high humidity. Damage resulting from water ingress, condensation, or improper storage is not covered under this warranty.

The Saturna Imaging System is **not waterproof** and must be handled and stored with care to prevent water damage. Liquid ingress and moisture exposure may lead to permanent failure of the internal electronics.

The following uses or conditions will void warranty coverage:

- Submerging the Saturna Imaging System in water, whether intentionally or accidentally
- Operating the device in heavy rain, splash-heavy environments (e.g., high surf), or any situation where water may drip or pool onto the enclosure
- Placing wet objects into the protective case along with the device
- Storing the device in sealed, humid environments, such as a closed case after field use without first allowing all components to dry fully
- Cleaning the device by rinsing or spraying
- Operating or storing the unit in cold, damp conditions where condensation may form inside the housing

Any evidence of water ingress - including corrosion, internal condensation, or failure due to moisture - will be considered the result of misuse and is not covered under warranty.

Filing a Claim

To initiate a warranty claim, please contact support@oceandiagnostics.com with the following:

- A description of the issue
- Serial number and proof of purchase
- Photographs of the device, if applicable

If a return is required, the instrument must be shipped in its original protective hard case. Returns not properly packaged may result in denied warranty coverage for damage sustained during transit.

Customers are responsible for all shipping costs associated with warranty returns, unless otherwise agreed upon in writing by ODI.

Limitations of Liability

This warranty is non-transferable and is the sole and exclusive remedy for product failure. ODI shall not be liable for any incidental, indirect, or consequential damages resulting from the use or inability to use Saturna.

Standard Terms and Conditions

➤ Ocean Diagnostics Inc.

2716 Rock Bay Ave, Victoria, BC V8T 4R9 CANADA
(Referred to as “ODI”)

➤ General

The following are the terms and conditions (referred to as the “Terms and Conditions”) attaching to the acceptance by Ocean Diagnostics Inc. (“ODI”) of any order placed by any person or entity (the “Purchaser”) for sales by ODI of any goods, products or services (the “Goods”) which ODI offers for sale from time to time. The Terms and Conditions apply to any purchase and sale of ODI Goods, whether by accepted purchase order, accepted ODI quote or estimate, or other written record. The Terms and Conditions may be varied or amended only by written agreement of the Purchaser and ODI. Where an appointed agent of ODI is buying on their own account, they shall be deemed to be the Purchaser.

➤ Prices

All prices accepted are firm and shall be denominated in the currency of the order acceptance or as otherwise agreed. Unless otherwise agreed, prices are Ex Works (EXW) ODI’s facility, and do not include insurance or shipping.

➤ Delivery

Delivery dates at time of acceptance of order are not guaranteed. All Goods shall be shipped Ex Works (EXW) ODI’s facility. Charges incurred by ODI for freight, documentation, export (or other special) packing, insurance and any other related services will be billed to the Purchaser. ODI is not responsible for loss or damage to goods in transit and risk of loss passes to the Purchaser upon the goods departing the ODI facility. The Purchaser is responsible to arrange insurance at its discretion for loss or damage to goods in transit.

➤ Payment

Payment for Goods shall be made by the Purchaser to ODI strictly according to the terms of payment specified on ODI’s acceptance of order. Payments when due from the Purchaser shall be made to ODI at its address as indicated on the invoice or order acceptance. No holdback, deduction or delay in payment is permitted for late delivery or shipping loss unless agreed in writing by the Purchaser and ODI, and in no event where delivery is lost or delayed due to circumstances not in ODI’s control. Purchaser agrees to pay interest on overdue payments at the rate of 18% per annum (1.5% per month).

➤ Return

All returns must have prior written authorization of ODI. Returns will be subject to a restocking fee of 30%, at ODI’s discretion. No returns after 90 days will be accepted.

➤ Modification of Goods

Where the Purchaser intends to integrate ODI Goods for use or resale, the Purchaser agrees not to modify ODI Goods except strictly in accordance with any manual, directions or specifications provided, or with the express permission of ODI to each proposed modification.

➤ Use of Intellectual Property Prohibited

Purchaser is strictly prohibited from making reproducing, reverse engineering, disassembling or modifying any ODI Goods or any part or component of any ODI Goods, for its own use or for third party use or resale, including software programs shipped with the Goods. Software, unless otherwise agreed in writing, may only be used or distributed with the Goods. Except where expressly agreed in writing, Purchaser is not granted any rights in or to any patents, trademarks, trade names, logos, copyrights or trade secrets of ODI or its suppliers in connection with the Goods.

➤ Resale

These terms and conditions shall not be affected by or varied by any terms and conditions of sale accepted by the Purchaser from its customer(s). The Purchaser is responsible for compliance by its customers with these terms and conditions, as applicable.

➤ Cancellation

Purchaser may not cancel an order without the consent of ODI. Cancellations are subject to fees of 10% of order value plus customization or configuration costs (if applicable).

➤ Non-Standard Goods

Special orders will require pre-payment in an amount to be determined by ODI, which will be forfeited if the order is cancelled or delayed without ODI's consent.

➤ Warranty

ODI warrants ODI Goods to be free from defects in materials, workmanship and function (as set out in the acceptance of Purchaser's order) for a period of **TWELVE (12)** months from date of delivery (the "ODI Warranty"). ODI will replace or repair to its standards any Goods which are proved to be defective, subject to the conditions and limitations herein. Any repair or replacement by ODI under the ODI Warranty will be completed at ODI's facility, at the address indicated above. Costs of transport or delivery to ODI's facility are for the Purchaser's account. Where a valid claim has been made and Goods are to be redelivered to the Purchaser, ODI will pay costs of re-delivery by usual commercial means (upcharges for express or expedited delivery will be paid by the Purchaser).

➤ Limitations to Warranty

For a Purchaser's claim under the ODI Warranty to be accepted by ODI, it must be the case that the Goods in question have been installed, powered, and operated in compliance with all instructions, manuals or specifications supplied by ODI or otherwise in effect. Damage incurred in shipping is not covered. Damage or default resulting from contact with corrosive materials or atmosphere is not covered. Damage or default from deployment inconsistent with instructions or guidelines in the user manual or documentation is not covered. Damage or default caused by modification of the ODI Goods without consent is not covered.

➤ Limitations to Liability

Except as to its obligations under the ODI Warranty, ODI is not responsible for any costs, losses, damages or claims whatsoever, whether direct or indirect, and howsoever incurred, by the Purchaser or by any third party claiming through or in relation in any way to the Purchaser, due to or related to any alleged or demonstrated fault or defect or unsuitability for purpose in ODI Goods, or the period of time during which the Purchaser or any claiming party may be deprived of the use of the Goods as a consequence thereof.

➤ Special Conditions

Special or supplemental terms or conditions may be attached to or apply in respect of certain ODI Goods (including OEM terms and conditions). Where contained in product documentation or otherwise set out in writing in the order, acceptance of order, invoice or elsewhere, these will apply and are binding on the Purchaser, to the extent they are not inconsistent with these terms and conditions. Unless expressly set out in writing, or otherwise by agreement of ODI and the Purchaser, no term or condition other than those set out herein will apply or be enforceable.

➤ Confidential Information

Any specifications, samples, designs, formulations or other information of ODI disclosed to the Purchaser in connection with an order or along with any ODI Goods is acknowledged by the Purchaser to be confidential and proprietary to ODI (the "Confidential Information"). Confidential Information shall remain the exclusive property of ODI and shall, along with any information derived from the same, be kept confidential by the Purchaser and its employees and agents and shall not, without ODI's prior written consent, be disclosed to any third party or used except for authorized purposes connected with or ancillary to the Purchaser's use of the ODI Goods. The Purchaser agrees not to analyze or reverse engineer any Good or sample or to assist and/or allow any third party to do so without the express written consent of ODI. The Purchaser agrees that the covenant of confidentiality and nondisclosure set forth above shall survive and remain in effect for so long as the Confidential Information remains confidential.

➤ Language

The language of the contract between ODI and a Purchaser is agreed to be English. Where the laws of a country of sale require goods to be marked in any particular manner or language(s), it is the Purchaser's responsibility to fulfill these obligations. ODI will provide assistance as is reasonably required.

➤ Arbitration

Any disagreements that cannot be resolved by the parties shall be exclusively resolved by binding arbitration in British Columbia, under the Arbitration Act (British Columbia), before a single arbitrator. Purchaser hereby consents to the venue and jurisdiction of such arbitration, whose costs shall be borne equally by the parties.

➤ Applicable Law

This Agreement shall be governed and construed in all respects in accordance with the laws of the Province of British Columbia, Canada, without regard to provisions relating to choice of law. The parties agree to exclude entirely the application of the United Nations Convention on Contracts for the International Sale of Goods from this Agreement and from any agreement or transaction that may be executed or carried out pursuant to this Agreement. Nevertheless, if any of the provisions of this Agreement or the application of any such provisions to the parties is held by a tribunal of competent jurisdiction to be governed other than by British Columbia law, then any relevant reference, waiver or incorporation of a British Columbia rule or statute contained in this Agreement shall be interpreted to the maximum extent practical to refer to comparable laws of the applicable jurisdiction.

➤ Aftersales Information

Visit <https://www.oceandiagnostics.com/support> to learn more about aftersales service policies, repair services, and support.

ODI Support

<https://www.oceandiagnostics.com/support>

This content is subject to change.

Download the latest version from

<https://www.oceandiagnostics.com/support>

If you have any questions about this document, please contact
Ocean Diagnostics Inc. by sending a message to support@oceandiagnostics.com.



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