

ISIIS-DPI Plankton Shadowgraph Camera

Model: ISIIS-DPI T424

Overview

The **ISIIS-DPI T424** was developed to quickly resolve large **phytoplankton chains**, such as diatoms, that are difficult to classify in standard in situ imagery.

It provides essential phytoplankton context to help interpret zooplankton distributions and **grazing dynamics**.

Simple, rugged, and fast, the T424 **complements ISIIS-DPI plankton imagers** by turning ambiguous features into meaningful biological categories - directly in the field.

In conventional ISIIS-DPI P-series images, phytoplankton chains often appear only as dots or short line segments; the T424 was designed to resolve these features and support identification of phytoplankton structure in situ.

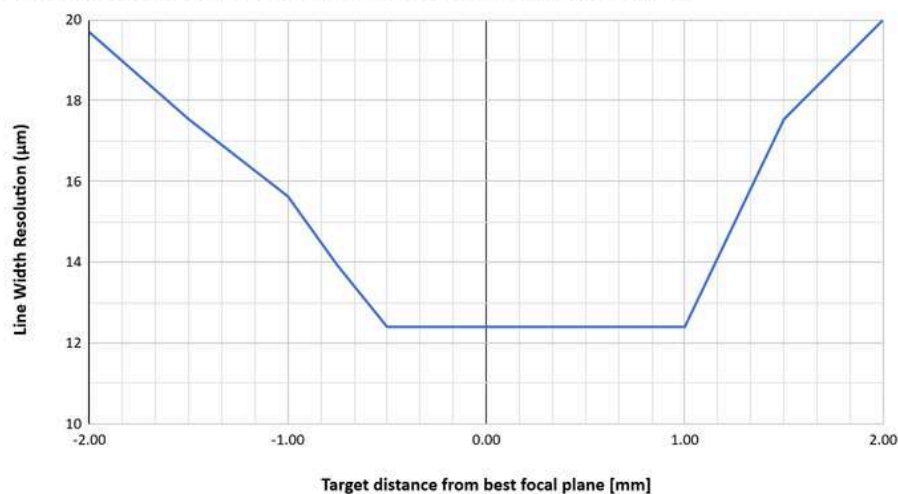
With a magnification of 0.424 (from which its name is derived), the T424 images a compact volume of approximately 18.3 × 18.3 mm with a ~3.5 mm depth of field, prioritizing optical simplicity and rapid image acquisition over volumetric sampling. This focused geometry enables fast turnaround from acquisition to interpretation.

For high-speed towing, illumination must be carefully managed. At typical tow speeds, acceptable exposure times fall in the sub-microsecond range to limit motion blur. When properly illuminated, the T424 delivers crisp, high-contrast images using a robust and stable optical configuration.

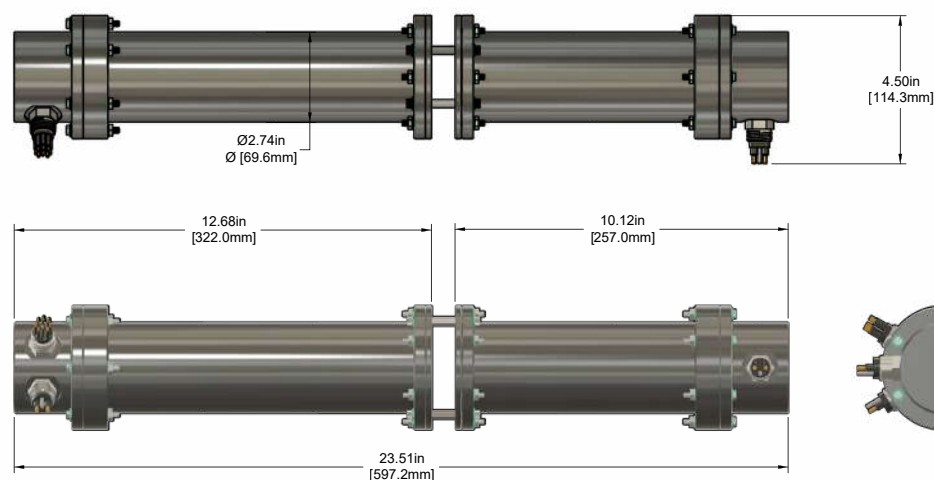
With a depth rating of 1,000m, The T424 provides a rugged, complementary solution well suited for deployment alongside ISIIS-DPI systems where rapid phytoplankton context is needed to support and interpret zooplankton observations.



Line Width Resolution (μm) vs. Target distance from best focal plane [mm]



ISIIS-DPI Plankton Shadowgraph Camera | T424



	1,000m Rating
Material	Anodized Aluminum
Weight in Air	5.5 Kg
Weight in Water	3.5 Kg

Features

Standard Field of View: 18.3 mm x 18.3 mm
Standard depth of Field: 3.5 mm
Pixel Resolution: 6.5 μm /pixel
Recommended for Particles: $>50\mu\text{m}$
Max. Water Speed* .7 knots

Image File Size 4 MB, 2048 px x 2048 px
Camera resolution: 5MP sensor, 3.45 μm pixels, 2/3"
Camera Frame Rate: up to 20 fps
Light: Blue 475nm, Red 630nm as an option
Power: 12V 6 Watts
Connectors: MCBH8M-CAT, 2 x MCBH2M-Power

* 100 % coverage condition; higher flow implies sub-sampling.

Deployment Methods

Towed Vehicles



Bays & Estuaries



Piers



CTD Rosettes

