

# 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.

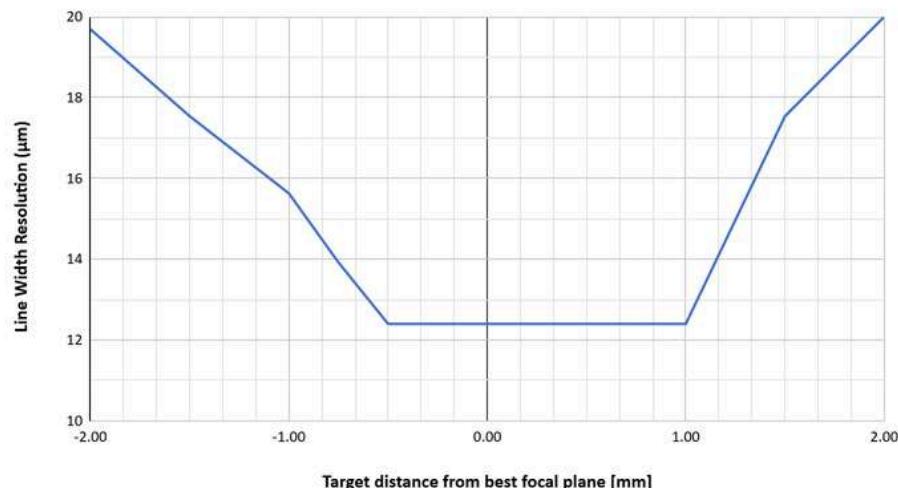
In conventional ISIIS-DPI P-series images, phytoplankton chains often appear only as dots or short line segments; the T424 was designed to resolve these features and support identification of phytoplankton structure *in situ*.

With a magnification of 0.424 (from which its name is derived), the T424 images a compact volume of approximately  $18.3 \times 18.3$  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.

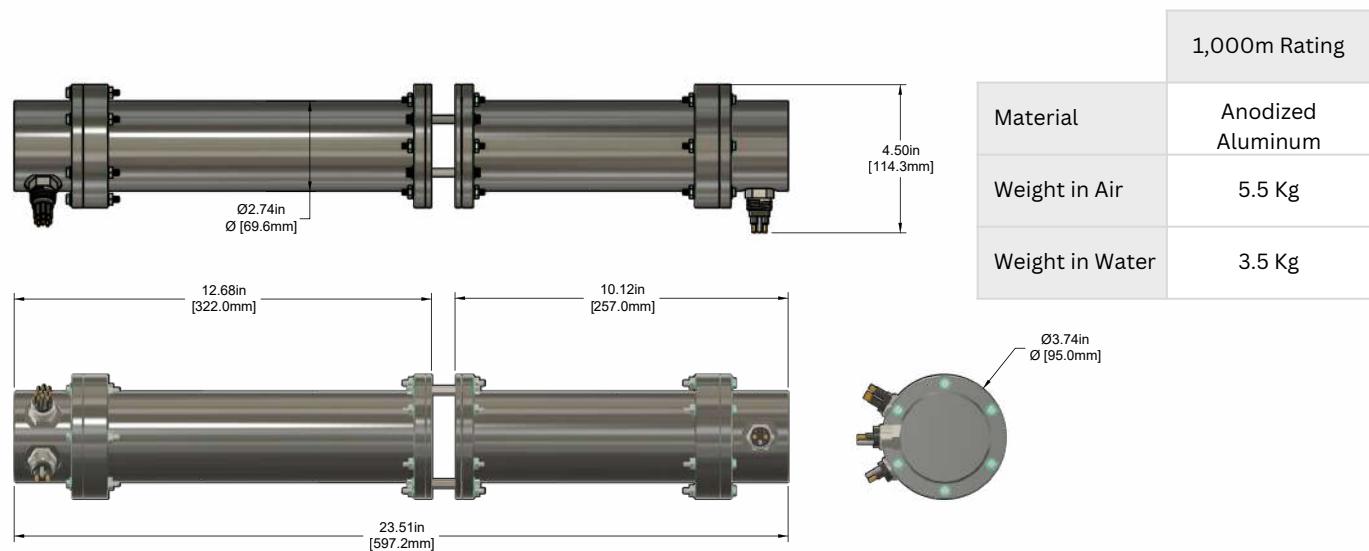
For high-speed towing, illumination must be carefully managed. At typical tow speeds, acceptable exposure times fall in the sub-microsecond range to limit motion blur. When properly illuminated, the T424 delivers crisp, high-contrast images using a robust and stable optical configuration.

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 ( $\mu\text{m}$ ) vs. Target distance from best focal plane [mm]



# ISIIS-DPI Plankton Shadowgraph Camera | T424



## Features

Standard Field of View:	18.3 mm x 18.3 mm	Image File Size	4 MB, 2048 px x 2048 px
Standard depth of Field:	3.5 mm	Camera resolution:	5MP sensor, 3.45 µm pixels, 2/3"
Pixel Resolution:	6.5 µm/pixel	Camera Frame Rate:	up to 20 fps
Recommended for Particles:	>50µm	Light:	Blue 475nm, Red 630nm as an option
Max. Water Speed *	.7 knots	Power:	12V 6 Watts
* 100 % coverage condition; higher flow implies sub-sampling.			

## Deployment Methods

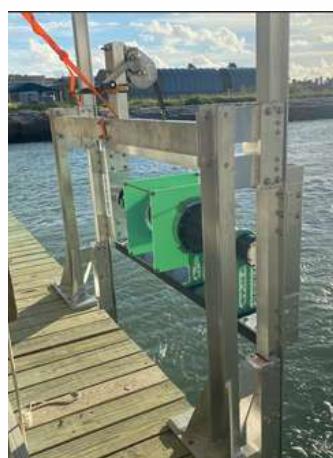
Towed Vehicles



Bays & Estuaries



Piers



CTD Rosettes

