DEEPVIEW

DEEPVIEW X400 CAMERA

The Deepview X400 Camera is a high-performance fully integrated machine vision system equipped with a 1.2 Megapixel CMOS sensor capable of either color or monochrome imaging. It integrates an NVIDIA Volta™ GPU, a 6-core CPU, and 8GB of DDR4 RAM, enabling the execution of advanced deep learning algorithms for real-time image analysis and pass/fail inspections. The system offers 1TB of storage for extensive image history and supports a cycle time of 150 ms. It is designed for visual inspection on production lines and integrates seamlessly with PLC EtherNet/IP systems. The Deepview X400 Camera is accessible via a browser interface, simplifying setup and use.

Features

◢ **High-Performance Imaging**
1.2 Megapixel sensor for quality lightweight images

◢ **AI-Powered Processing**
Embedded NVIDIA™ GPU and CPU for real-time analysis.

◢ **Large Storage Capacity**
1TB storage for extensive image history

◢ **Fast Cycle Time**
150 ms cycle time for efficient operations

◢ **Easy Integration**
PC EtherNet / IP compatibility for seamless system integration

Basic Technical Specs

Chroma	Mono | Color
Resolution	1280 x 960
Megapixels	1.2 MP
Sensor Type	CMOS
Lens Mount	C-Mount
GPU	384-core NVIDIA Volta™ with 48 AI cores
CPU	6-core ARM, 64-bit, 1.9 GHz
RAM	8GB DDR4
Storage	1TB SSD
I/O Interfaces	24 VDC (6 inputs, 4 outputs) EtherNet / IP
Power	24 VDC
Operating Temperature	-25°C to 85°C
Size	100mm x 150mm x 42mm
IP Rating	IP54

Integrated Vision System

The Deepview X400 Camera distinguishes itself with its advanced browser-based deep learning interface, designed to streamline and enhance the user experience in industrial vision applications. It can be accessed by opening any web browser and navigating to **192.168.2.21:5000**

Seamless Browser-Based Operation

The interface is designed for easy access via standard web browsers, eliminating the need for specialized software.
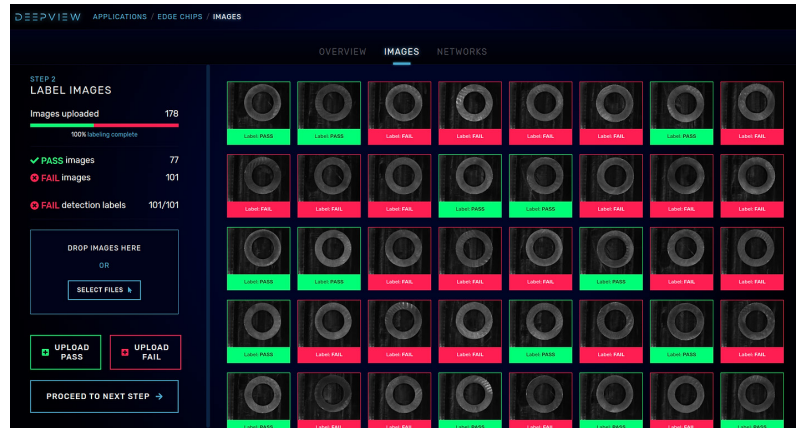
Dual-Module Functionality

The interface is divided into two modules: Training and Camera. The Training module is for organizing, labeling, and training neural networks. The Camera module focuses on capturing images, running production, and reviewing image history.

Simplified Neural Network Training

The Training module interface features effective image labeling and neural network training. Users can upload images directly or as pre-sorted pass/fail sets, simplifying the process of training the AI. The interface allows for easy labeling of images as passes or fails and includes tools for defect marking, ensuring precise training of the neural networks.

Real-Time Monitoring and Predictive Analysis

The Camera module provides real-time visualization of the camera feed and predictive analysis, displaying predictions with confidence ratings and maintaining a detailed history log for performance tracking and analysis.

Complete Control

The interface offers complete control of camera settings like exposure, I/O configurations, and EtherNet IP settings

Data Management and Historical Analysis

The interface provides tools for reviewing historical data, comparing results, and performing detailed analyses. This feature is particularly valuable for identifying trends and making informed decisions to improve industrial processes.

Complete Technical Specs

Basic Camera Specs

Chroma	Mono | Color
Spectral Range	300 to 1100 nm
Resolution	1280 x 960
Megapixels	1.2 MP
Pixel Size	3.75 µm × 3.75 µm
Sensor Type	CMOS
Sensor Size	Type 1/3
Shutter Mode	Global Shutter
Max. frames per second	52 fps
Lens Mount	C-Mount
Output Image	Lossless BMP
Bit Depth	12-bit

Image Quality and Performance

Automatic control	Exposure, gain, white balance
Quantum Efficiency	69% at 529 nm*
Dynamic Range	63 dB*
Absolute Sensitivity Threshold	6.7 dB*

*Based on methods outlined in EMVA Standard 1288 Release 3.1

Hardware

GPU	384-core NVIDIA Volta™ with 48 AI cores
CPU	6-core ARM, 64-bit, 1.9 GHz
RAM	8GB DDR4
Storage	1TB SSD

Connectivity

|	
I/O Interfaces	24 VDC (6 inputs, 4 outputs) Ethernet / IP
Network Capabilities	Remote login with VPN
Power	24 VDC | 19 W Max.

Physical

Operating Temperature	-25°C to 85°C
Size	100mm x 150mm x 42mm
IP Rating	IP54
Modules	Camera and Deep Learning

Technical Drawings

Dimensions are in mm. The default mount is the Swivellink AFSB-1

Figure 1

100

150

Figure 2

40

24

M6 x 12mm Thread

Figure 3

52

42
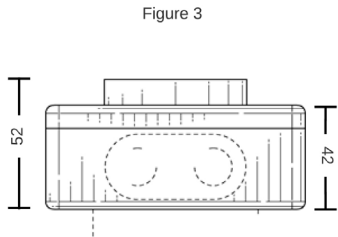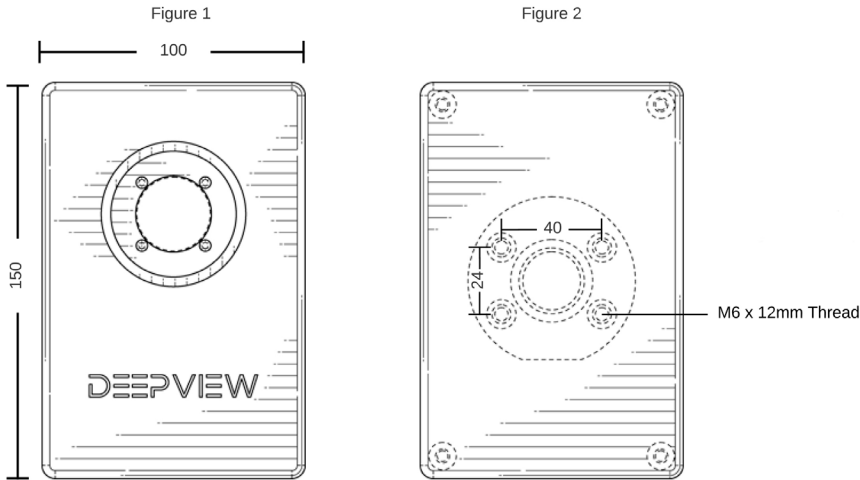
Mounting

Please see accessories for more information.

RMX140

ADP0002

Screws

DF55-46

M117

DEEPVIEW AI X400

AFSB-1

Screws
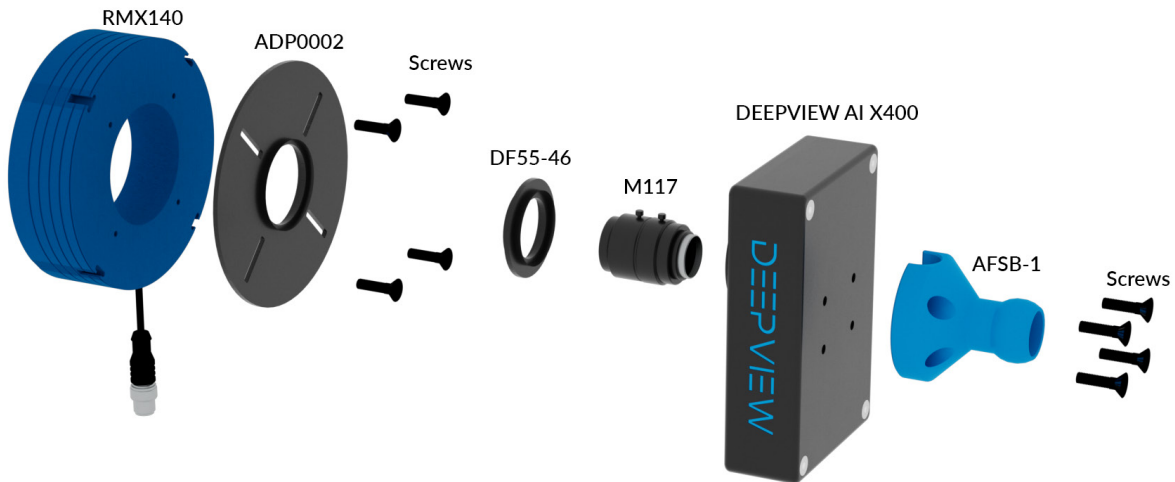
Accessories

Part Number	Description
RMX75 Series Smart Vision Lights	**Mountable LED ring light** Best for working distances between 25 - 200 mm
RMX140 Series Smart Vision Lights	**Mountable LED ring light** Best for working distances between 100 - 500 mm
ADP0001 Smart Vision Lights	**Camera adapter** Secures the vision system to the RMX75*
ADP0002 Smart Vision Lights	**Camera adapter** Secures the vision system to the RMX140*
M117 Series Tamron	**C-Mount lens family** Available in 6, 8, 12, 16, 25, 30, 50, and 75 mm focal lengths
M118 Series Tamron	**C-Mount lens family** Available in 6, 8, 12, 16, 25, 30, 50, and 75 mm focal lengths
DF55-46 Smart Vision Lights	**Double female threaded adapter** Secures the M117 and M118 series to the light's mounting bracket
AFSB-1 Swivellink	**Ball mount base** Base for mounting the entire vision system to standard T-slot aluminum extrusion