VIPER™ 3D visual perception system enables intelligent automation with the turn-key set of hardware and AI software. Its key features: low power, small size, light weight, ingress protected, non-interfering passive optical sensing, on-board image processing pipeline, low light tolerance, extensible with perception apps, available to adapt to tailor-made application, developer friendly.

TECHNICAL SPECIFICATIONS

	Standalone	OEM Kit

Physical		
Dimensions	246 x 98 x 35 mm	custom
Stereo Baseline	200 mm	50 - 250 mm
Weight	0.8 kg	custom (min 0.25 kg)
Power Consumption	0.4 - 2.0 A @ 12 V (min - max)	
Operating Temperature	-10 °C to 40 °C	
Communication Interface	1 Gb/s Ethernet	1 Gb/s Ethernet, USB 3.0
Mounting Interface	1/4" - 20 UNC, M4 mounting holes	custom
Ingress Protection	IP65	up to IP67

Camera		
Sensor	2 x 1/3" @ 3.4 MP low light 16:9 aspect ratio	
Video Resolution	2304 x 1536 px @ 60 FPS	
Field of View	70° x 43° x 82° (H x V x D)	up to x 130° diagonally
Lens	3.6 mm, fixed focus	custom, optional IR filter
Embedded Computer	NVIDIA® Jetson™ TX2 Module	NVIDIA® Jetson™ TX2/TX2i Module
Memory	8 GB	
Data Storage	32 GB	32 GB, expandable

Stereovision		
Algorithm Family	Semi-global Block Matching, adjustable	
Depth Frame Rate	up tp 40 FPS, adjustable	
Depth Range	up to 50 m (1-15 m optimal range)	custom
Depth Resolution	up to HD (1280 x 720), adjustable	up to FullHD (1920 x 1080), adjustable
Depth Disparities	32-256, adjustable	
Output	disparity map, RGBD point cloud	
Synchronization	per frame (outgoing data timestamped)	

PERCEPTION APPS

Standard (separately available)	
Follow-me	Continuously measures distance to the previously registered object/human
Obstacle Detection	Detects obstacles for robot navigation and collision avoidance purposes
Tag Detection	Tracks supplied Aruco/QR codes and measures distance to them
Safety Volume Guard	Detects trespassing attempts with respect to the predefined safety volume box
Object Identification	Identifies objects based on pretrained object classes, evaluates their position and orientation
3D SLAM	Performs 3D vision based simultaneous localization and mapping

EVALUATION KIT PACKAGE CONTENTS

VIPER™ 3D Visual Perception System, AC adapter, Ethernet cable, Tripod, User Guide, System Development Kit

SYSTEM DEVELOPMENT KIT CONTENTS

Help: documentation and samples
API: ROS + Linux (built-in), ROS.NET + Windows (adapter library provided)
Host system requirements: Linux + ROS or Windows 10 + .NET4.5 Framework