Structured Light Module Components



Overview

Each module includes a pattern generating Diffractive Optical Element (DOE) and lens-system to provide magnification (without aperture clipping). Accurate structured light technology is behind the user face recognition being implemented in smartphones. Structured. Virtual, Augmented and Mixed Reality, Autonomous Cars and Medicine are just a sample of the applications which require projection of patterns with very large angles for 3D sensing (Standard Beam Splitters, Random MultiSpot, Dot Generators, Multi-Lines, Homogenizers, Multi-Rings or other custom. The Structured Light Module Market was valued at USD 1. 25 billion in 2025 and is projected to grow to USD 1. The pattern can be either stripes, grids, or dots.

Article Content

Using DLP® Development Kits for 3D Optical Metrology Systems

This application note presents the operating theory of structured light systems, as well as the key components and design considerations. Special attention is given to hardware selection (pattern

3D Machine Vision Based on AM572x with DLP Structured Light

Figure 2 shows the major components of the 3D DLP scanner design. The system is based on the following key component modules:

Structured Light Module

Each module includes a pattern generating Diffractive Optical Element (DOE) and lens-system to provide magnification (without aperture clipping). These modules

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Structured Light Module Market by Component, Light Source Type,

A nuanced segmentation view reveals the varied demand drivers and technical expectations that structured light modules must meet across different end uses, component

Structured light

Structured light measurement is a technique used to determine the three-dimensional coordinates of points on an object''s surface. It involves a projector

Structured Light: Ideas and Concepts

In most cases, the structured light fields are closely coupled with the structured matter, and any electromagnetic medium shows the more or less strong dispersion (frequency dependence of the

808nm Multiple Line Structured Light

Line lasers are key components in 3D scanning to inspect from gap, flush to deformation and crack defects. Structured light is still another solution for depth

3D structured light vision

Keep learning! Read the whole article about active and passive 3D vision principles here, including stereo, active stereo, laser, ToF, and structured light machine vision.

STRUCTURED LIGHT

Structured light allows you to take a scan of the entire target surface and inspect multiple features simultaneously such as fasteners, holes, slots, studs, and surface gap and flush.

Structured Light Laser Modules

Shop high-precision Structured Light Laser Modules for 3D scanning, depth sensing, and measurements. Available in various wavelengths (830nm, 850nm) with random dot projection for

Novel calibration technique for hybrid structured-light three ...

Thus, hybrid structured-light technique has obvious advantage in measuring more wider range of surfaces with different reflective characteristics. An accurate data fusion between the subsystems is

3D Scanning with Structured Light

3D Scanning with Structured Light In this chapter we describe how to build a structured light scanner using one or more digital cameras and a single projector.

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What is a Structured Light Scanner?

What is a Structured Light Scanner? Structured light scanners are measurement devices that utilize a structured pattern of light projected onto an object''s surface

High Performance Structured Light Lasers

Structured light lasers designed for machine vision & 3D imaging applications. Excellent uniformity in a compact form factor.

Solar Panel Construction

Solar Panel Assembly and Manufacturing Solar panels are assembled in advanced manufacturing facilities using automated robotic equipment and sensors to precisely position the

Generation and Detection of Structured Light: A Review

The generation and detection of diverse structured light beams on different platforms, such as free space, optical fiber, and integrated devices, have become a necessary part of structured light ...

Internal Structure of Optical Modules

Optical modules are key components in fiber optic communication systems, responsible for electro-optical conversion, meaning the conversion of electrical signals to optical signals or vice

Camera systems for 3D sensing

We offer image sensors, micro cameras, flood & dot illuminator modules to enable passive stereovision, structured light & active stereovision 3D sensing systems.

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