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SCORPION VISION SOFTWARE® COLOR IDENTIFICATION SYSTEM

The Scorpion Color Identification system is a camera based system for color identification. The system picks the best color match from a set of reference images and calculates the color coverage of the inspected item. This is illustrated below using a piece of painted wood.



Scorpion Color Identification System

System Description

The Scorpion Color Identification System consists of the following parts:

- Junction Box with color camera
- FireWire Interface Board
- Scorpion Vision Software CD and license key
- RealVNC remote pc operation
- Scorpion Color Identification Profile

The system is connected to a Personal Computer with a FireWire cable. The object must be evenly and consistently illuminated. The light source is not part of the kit. The system communicates with external systems using RS232, OPC and TCP/IP by sending start and stop, status and measurement data.

Scorpion Vision Software CD

Scorpion Vision Software® is distributed on a CD with the following contents: Scorpion Vision Software, System Requirements, Scorpion Setup Program, Camera drivers, Documentation and Support programs.

Scorpion Color Identification Profile

The profile consists of the following elements:

- Color Configuration screen with:
 - · Treshold values
 - Size and width of color sensors
 - Navigation of ROI
- LineFinder finding reference edge handles translation and rotation of item
- Color matching
 - ColorMatcher tool
 - ColorMatcher Business Logic in Python Script

The Color Identification profile is contained in a zip file for easy update or remote support through e-mail and internet.



Scorpion Color Configuration

Image processing concept

- The system measures the color in an N x M matrix
- The matrix may can be fixed or made to refer to an edge on the item
- Based on the number of accepted colors a coverage is calculated
- The system thus handles that a color is only partly present

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Teaching colors with ColorMatcher

Teaching colors with ColorMatcher

- The system is trained after installation using reference images (colors)
- It is possible to define an infinite number of colors
- Each color may have an infinite number of reference images
 - Multiple references are used to describe color variation within one color – the variation may be due to physical variations or real color changes





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Scorpion Color Identification System User Interface

User Interface

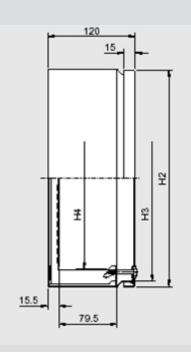
The following information is available in the user interface:

- · Camera image
- Inspection result with indicator panels
- Description Web page that contains a short description of the identification task
- History displays the latest inspection results
- · Curves give a graphical view of measured values
- Results show measured values of the latest inspection
- Statistics give a periodical view of the inspection results
- Color Configuration parameters and ROI navigation buttons

TECHNICAL DATA

Junction Box System

- · Rittal Junction Box with mounting plate
 - Width 150 mm 0
 - 0 Height (H2) 150 mm
 - Depth 120 mm 0



Camera System

10 meters

Interface card

camera 640x480

Software

- Scorpion Vision Software
- Scorpion Color Identification

Profile

- Scorpion Setup program
- Camera drivers
- Support programs

Speed

Up to 10 identifications or colors / second

Communication

- RS232 PLC
- TCP/IP
- **OPC** including Siemens Profibus
- Advantech IO Modules
 - o RS485
 - TCP/IP 0

Data Export

- TCP/IP
- **RS-232** •

Remote Operation

RealVNC over tcp/ip

Operating System

Windows 2000 / Windows XP

Minimum Requirements

- Intel Pentium III 800 MHz
- 128 MB of RAM
- 10 MB free hard drive space

Language Support

• English

Scorpion Vision Software® is a registered trademark of Tordivel AS.

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Specifications might change without any notification.

Imaging Source DFK21F004 color

4.5 m FireWire cable - option up to

Unibrain Fireboard Red IEEE-1394

Number