FLUORESCENCE IMAGING SOLUTION (FIS)

UV CODE READING & MACHINE VISION APPLICATIONS
including: UV inks on tax stamps, bank note inspection, glue seal inspection... Compatible with ANY VISIBLE SPECTRUM camera.

- ALL-IN-ONE UV SOLUTION,
- SAFE, POWERFUL, WIDE UV SPECTRUM,
- HOMOGENEOUS dome-effect, suitable for easy to complex surfaces,
- Compatible with ANY VISIBLE SPECTRUM camera,
- INTEGRATED FILTER, just place camera,
- WHITE LEDs for secondary inspection,
- EASY TO USE – UV imaging is accessible for everyone.

TPL Vision is an ISO 9001 certified manufacturer.

CONTACT YOUR LOCAL SALES REPRESENTATIVE for more details.
In this example there are a number of features which can be seen with a variety of contrast levels:

1. **METAL FLAKE IRREGULARITY** clearly visible in image B & C but not so visible or well contrasted in image A.
2. **GLUE BEAD MATERIAL** fluoresces under UV365nm as shown in both image A & image C.
3. **BACKGROUND PLASTIC** fluoresces under UV405 and UV395. Shown clearly in image A & image B.
**FLUORESCENCE IMAGING SOLUTION (FIS)**

**APPLICATION SHOWCASE**

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**EXCISE STAMP ON LUXURY GOODS CARTONS**

- **CHALLENGES**: Excise stamp under clear, glossy film and moving at high speed.
- **TASK**: Check for presence of excise stamp and print quality.

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**1 REMOVE GLARE**

- Image taken with UV365 spot light.

**2 HIGH SPEED**

- Image taken with UV365 setting on FIS.
- Image at 100µs exposure time.

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The dome light form of the FIS also blocks unwanted ambient light from the environment adding extra security to the Vision system.
**FULL UV SPECTRUM COVERAGE**

365nm → 405nm

3 UV wavelength setting options.

Product also has white LEDs for secondary inspection.

**OPTION 1**: UV365 + UV395 + UV405

**OPTION 2**: UV395 + UV405

**OPTION 3**: UV365 only

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**INTEGRATED LP415 FILTER**

with M27 threads for specific band pass filter if required. This means you can add any camera, from basic code readers to high end smart cameras.

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**BUILT IN SAFETY**

Dome + LP filter blocks all direct UV radiation, making it safer for operators in the environment, avoiding the need to enclose the test station.

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**POWERFUL STROBED UV ILLUMINATION**

for high speed applications.

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**EASY TO USE**

M12 5P

with all current control integrated. Simply apply 24VDC and strobe signal.
**FLUORESCENCE IMAGING SOLUTION (FIS)**

**HOW TO SET UP YOUR FIS**

1. Connect the **power supply** (24 VDC).
2. Set up **strobe signal** with the camera.
3. Find the **wavelengths** you need by making adjustments with the button (remove cap and use tool to reach button).
4. Use the captured images to **inspect the contrast level** with different wavelengths.

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**OPTIONAL BANDPASS FILTER USE**

The FIS has an **integrated longpass filter** (LP415), this means it will block all UV light and allow only the visible light (>415nm) to pass.

There is an additional M27 thread on the dome to attach a bandpass filter. Bandpass filters are particularly useful when inspecting **white parts** as they will often fluoresce purple, some of this will be visible in the camera, **unless a bandpass filter is used.**
**FLUORESCENCE IMAGING SOLUTION (FIS)**

**TECHNICAL DATA**

**WORKING DISTANCE**
(from underside of light)

**AREA WITH FLUORESCENCE**

<table>
<thead>
<tr>
<th>Working distance</th>
<th>80mm Version</th>
<th>130mm Version</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area with fluorescence (mm)</td>
<td>Minimum Exposure Time (μs)</td>
</tr>
<tr>
<td>50 mm</td>
<td>50 x 40</td>
<td>30</td>
</tr>
<tr>
<td>100 mm</td>
<td>60 x 50</td>
<td>100</td>
</tr>
<tr>
<td>150 mm</td>
<td>70 x 60</td>
<td>400</td>
</tr>
</tbody>
</table>

**Note:** Above figures do not cover the dark spot which may be visible in the field of view on shiny parts; this is dependent on the type of optics used, the working distance and how reflective the material is.
**FLUORESCENCE IMAGING SOLUTION (FIS)**

**TECHNICAL DATA & ORDER REFERENCES**

**FIS-80-MUV-WHI**
- **80mm Internal Ø** with UV365-UV395-UV405 & WHI

**FIS-130-MUV-WHI**
- **130mm Internal Ø** with UV365-UV395-UV405 & WHI

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**Electronics**
- **Power Supply**: 24 VDC ±5%
- **Functioning Mode**: UV = NPN Strobe only / WHI = NPN Strobe and CW
- **Rise and Fall Time**: 15µs/10µs, respectively
- **Wiring**: M12 5 Pin Connector
- **Strobe Conditions**: UV = Max 10% Duty Cycle, 10ms max on-time
  - WHI = no max on-time
- **Peak Consumption (UV)**: 18 W
  - 23 W (WHI)
- **Average Consumption (UV)** at 10% Duty: 1.8 W
  - 2.3 W (WHI)

**Optics**
- **Colours**: UV365, UV395, UV405 & White (5000K)

**Mechanical**
- **Dimensions (external)**: 193 x 136mm
  - 257 x 197mm
- **Height**: 75mm
  - 106.75mm
- **Weight**: 430 g
  - 680 g
- **Material**: Aluminium, ABS, PMMA, Glass
- **Mounting/Fixing**: 2x M5 Screws (not supplied)
- **Mounting Brackets available**: TPL-MOUNT-MR

**Environment**
- **Operating Temperature**: -10° to +40°C / 80% of humidity without condensation
- **Storage Temperature**: -20° to +60°C / 80% of humidity without condensation
- **IP Protection**: IP 65
- **Labels**: RoHS-CE-WEEE

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Features and presentations subject to modifications without prior notice. Ref. TS-050601-A2, 01/2023 Edition.