FLUORESCENCE IMAGING SOLUTION (FIS)

TPL VISION
Active LED solutions

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.

24V ±10% | CE | RoHS | IP65

TPL Vision is an **ISO 9001** certified manufacturer.

CONTACT YOUR LOCAL SALES REPRESENTATIVE for more details.

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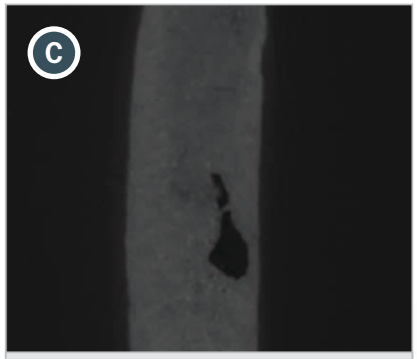
APPLICATION SHOWCASE

GLUE INSPECTION ON CAR DOOR PANEL

The wavelength selector button allows you to change the range of UV wavelengths used to illuminate the part, to give the best contrast and image of the fluorescence and the object, depending on which features are required to be detected.

365nm | 395nm | 405nm

395nm | 405nm



365nm

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**.

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APPLICATION SHOWCASE

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.

1 REMOVE GLARE

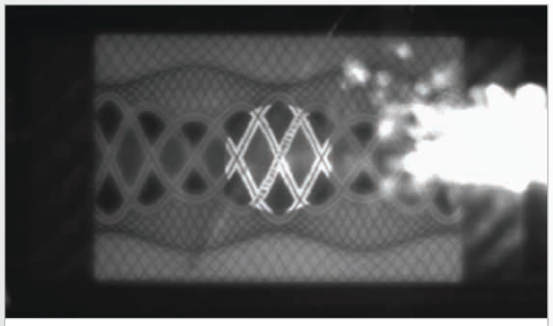

Image taken with UV365 spot light.

Image taken with UV365 setting on FIS.

2 HIGH SPEED

Image at 100µs exposure time.

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

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TECHNICAL FEATURES

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.

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

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.

EASY TO USE
M12 5P

with all current control integrated. Simply apply 24VDC and strobe signal.

POWERFUL STROBED
UV ILLUMINATION

for high speed applications.

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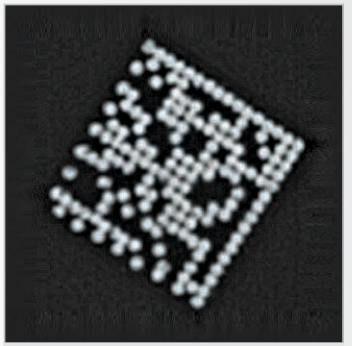
HOW TO SET UP YOUR FIS

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.

LP415 alone



LP415 + BP470

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 additonal 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**.

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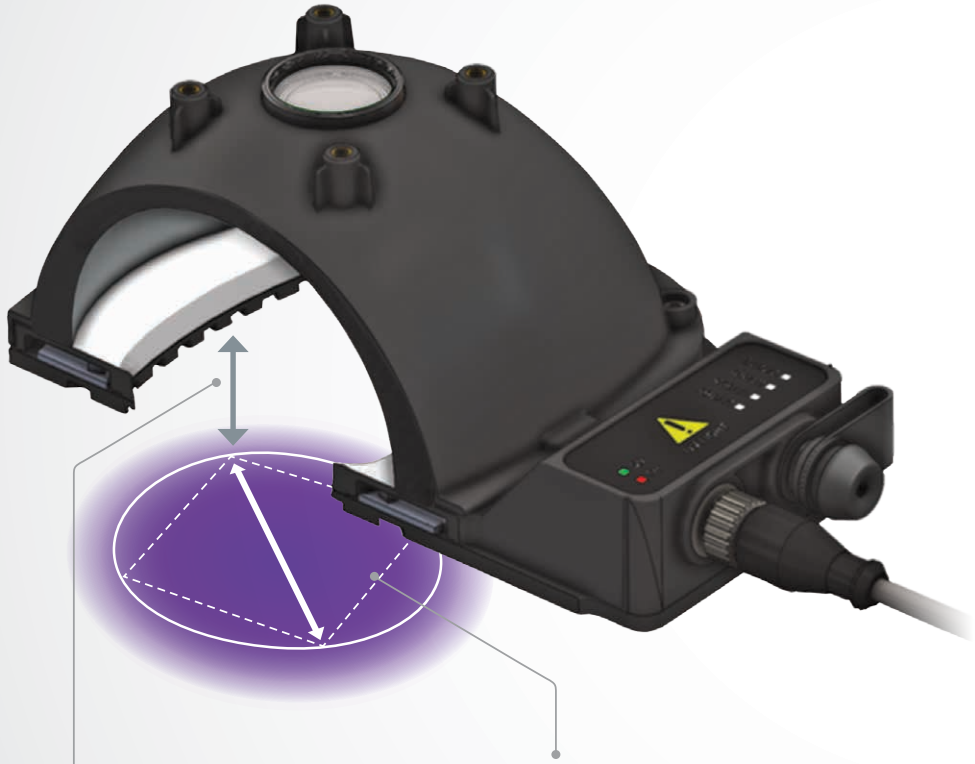
TECHNICAL DATA



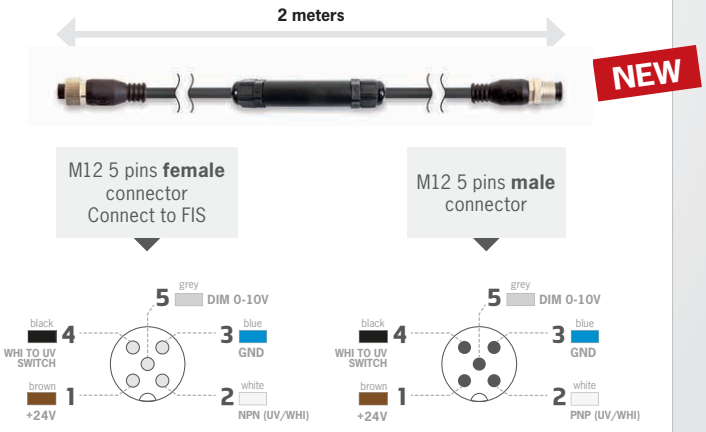
	80mm Version		130mm Version	
Working distance	Area with fluorescence (mm)	Minimum Exposure Time (µs)	Area with fluorescence (mm)	Minimum Exposure Time (µs)
50 mm	50 x 40	30	90 x70	50
100 mm	60 x 50	100	100 x 80	120
150 mm	70 x 60	400	110 x 90	600

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.

PNP-NPN CONVERTER (OPTIONAL)

This accessory converts PNP signals into NPN signals on **line 2** as shown in the description on the right ➡

Ref: ACC-PNP-NPN-2M



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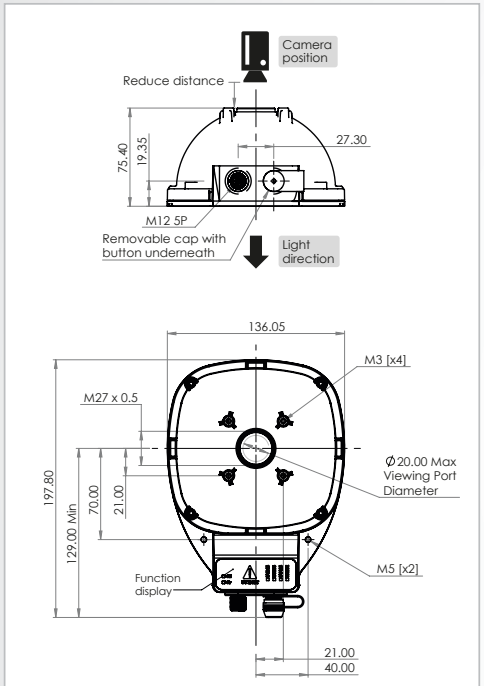
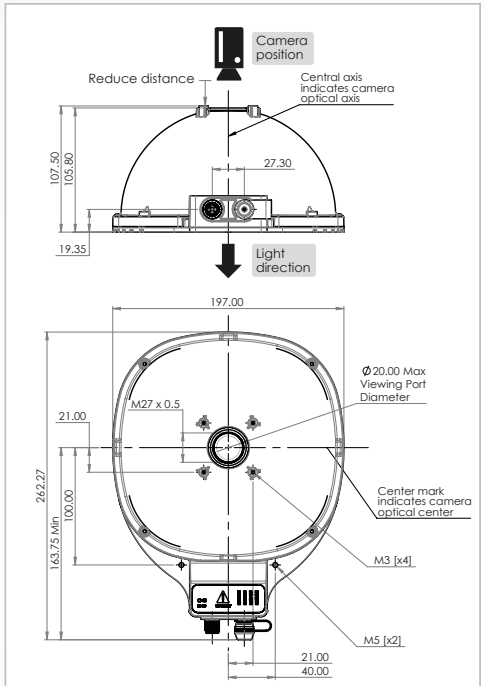
TECHNICAL DATA & ORDER REFERENCES



Ref: **FIS-80-MUV-WHI**

80mm Internal Ø
with UV365 - UV395 - UV405 & WHI

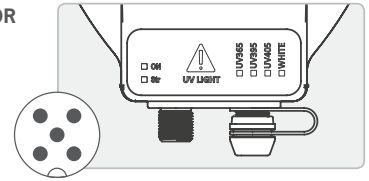


Ref: **FIS-130-MUV-WHI**

130mm Internal Ø
with UV365 - UV395 - UV405 & WHI

M12 5P CONNECTOR

- Power Supply
- Strobe UV/WHI
- UV/WHI switch
- Dimming



REMOVABLE CAP TO ACCESS BUTTON.
Use button to cycle through UV wavelengths:

1. 365 + 395 + 405
2. 395 + 405
3. 365

	FIS-80-MUV-WHI	FIS-130-MUV-WHI
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
Average Consumption (UV) @ 10% Duty	1.8 W	2.3 W
Peak Consumption (WHI) (Cont. Working)	7 W	9 W
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 No thermal shock (max temperature variation: 10°C in 24h)	
Storage Temperature	-20° to +60°C / 80% of humidity without condensation No thermal shock (max temperature variation: 10°C in 24h)	
IP Protection	IP 65	
Labels	RoHS-CE-WEEE	