



**AIDO**

# AIDO

**Industrial Association of  
Optics, Colour & Imaging  
Technological Institute of  
Optics, Colour & Imaging**

# **AIDO - Our Mission**

To develop and implement research, technological development and innovation activities of high added value for the industrial companies in the local, national and international level.

AIDO acts as a technological reference in optical technologies (Laser, Colour, Vision, Imaging and Lighting) applied to industrial production.

AIDO, Strategic Plan 2006-2008

Currently AIDO has almost **2000 associated companies** and **1000 client companies**, while continually collaborating with industrial associations, chambers of commerce, public and private research centres and universities to jointly develop R+D projects.

AIDO has the following **installations** in Paterna's Technology Park (Valencia):

- Main building with 1,800 m<sup>2</sup> for R+D activities.
- 500 m<sup>2</sup> in a shared building for training.
- Currently the second AIDO building is in construction, mainly to be used for Audiovisual and Training technologies. The expected inauguration date is for June 2008.

## **FIELDS OF KNOWLEDGE:**

Optical Technologies with industrial applications

## **TECHNOLOGICAL SPECIALTIES:**

Machine Vision

Laser

Industrial Colourmetry

Optical Engineering

3D digitalisation

## **MAIN CLIENT SECTORS:**

Paints and Varnishes

Ophthalmic Optics

Automation

Industrial machinery

Lighting and signs

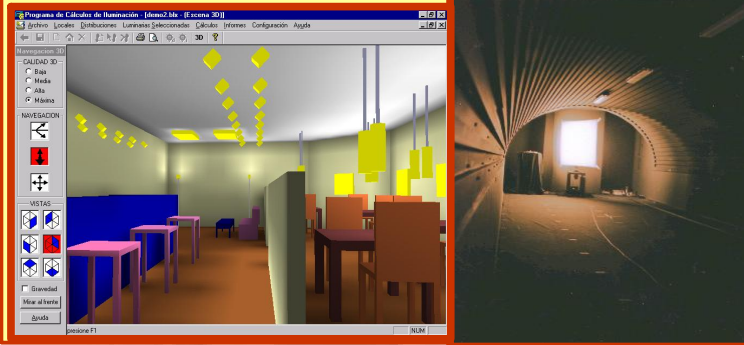
Electrical and Electronical

Moulds and models

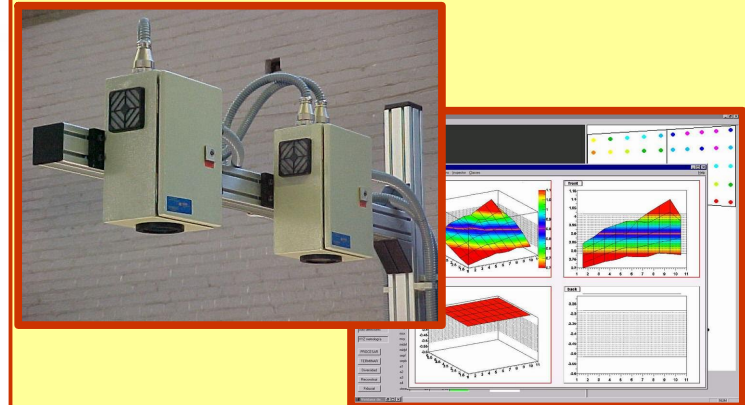
Aeronautics

# R&D and Innovation area

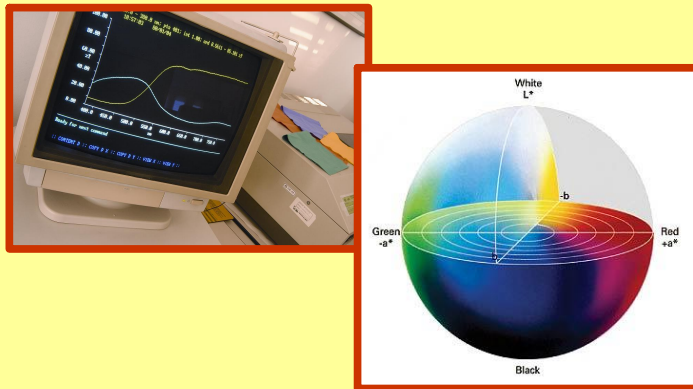
## OPTICAL ENGINEERING



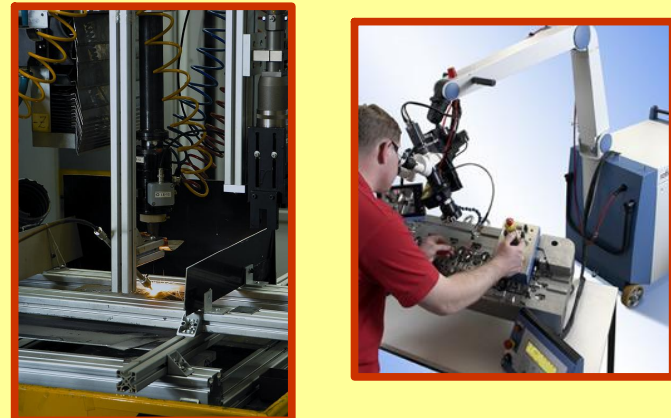
## MACHINE VISION



## COLOUR

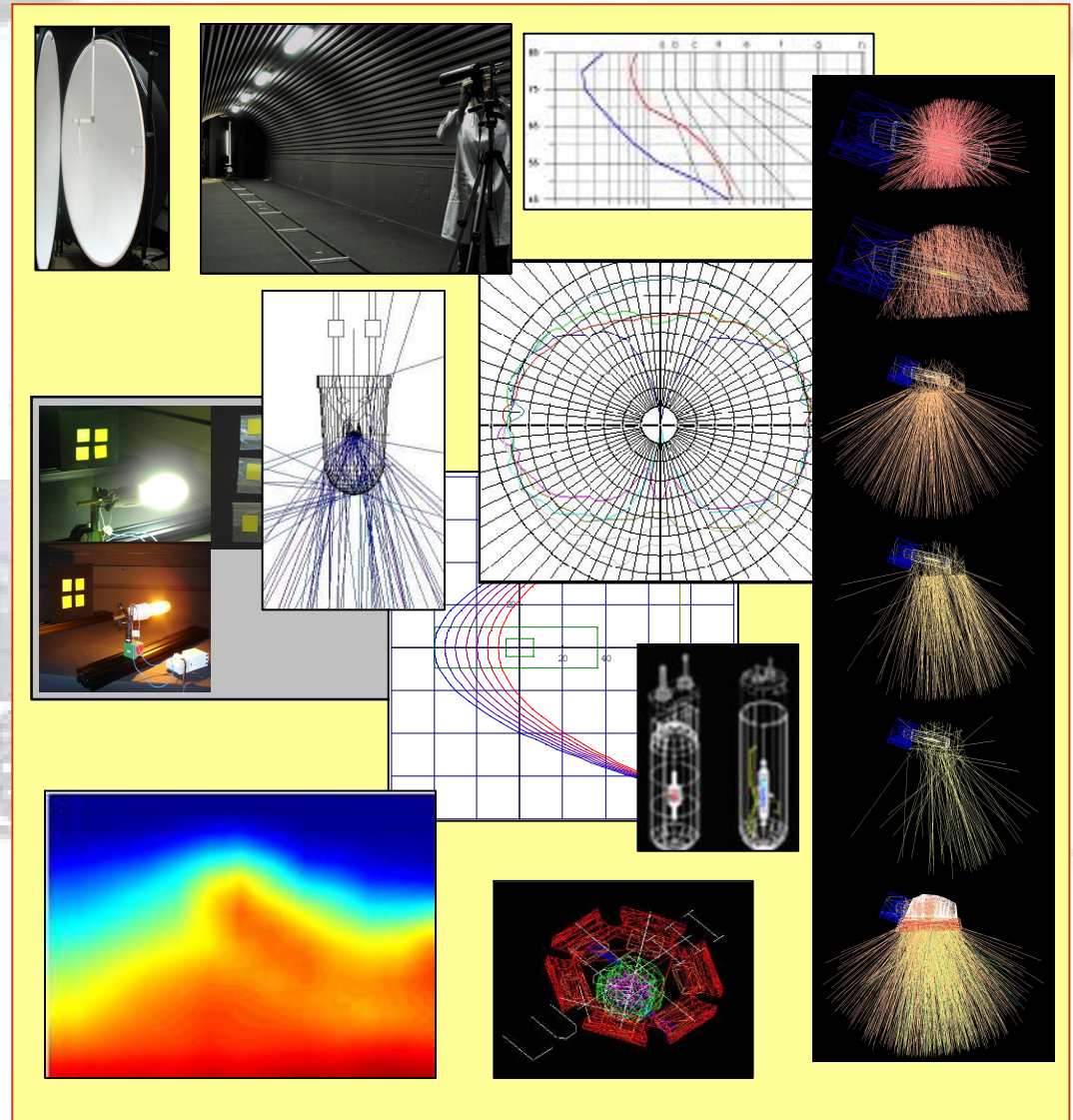


## LASER



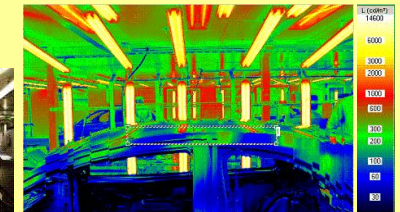
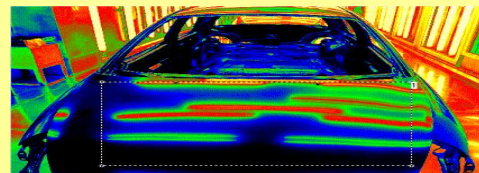
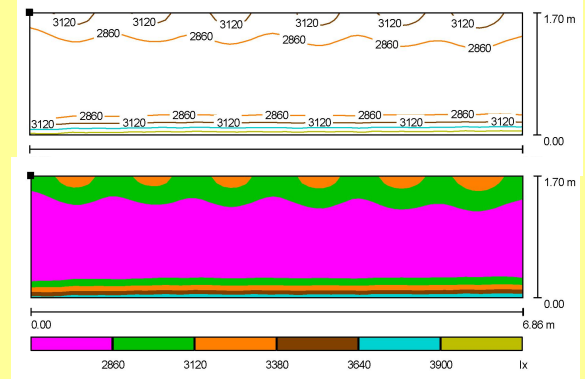
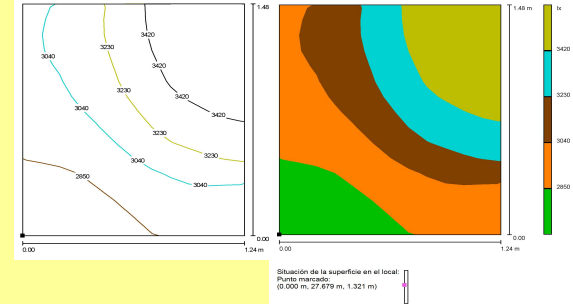
# OPTICAL ENGINEERING

- Laboratory tests: luminous characterization of products
- Optical Design and Photometric simulation



# OPTICAL ENGINEERING

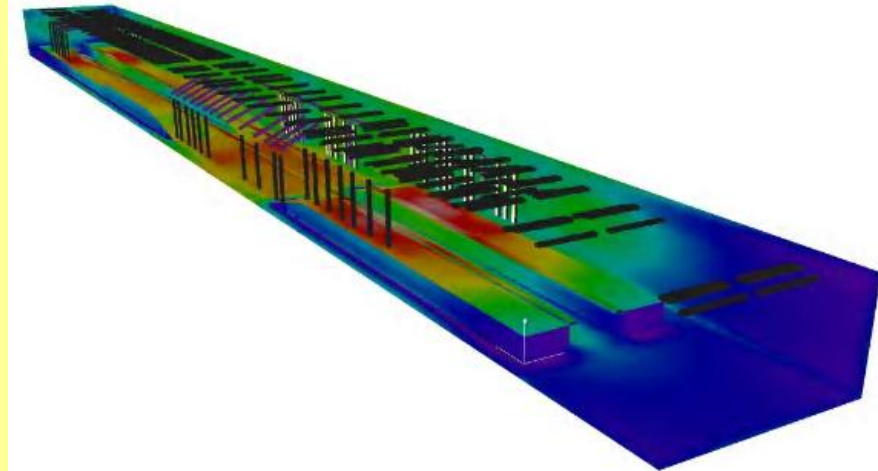
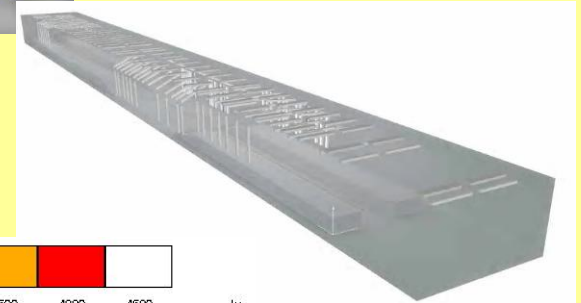
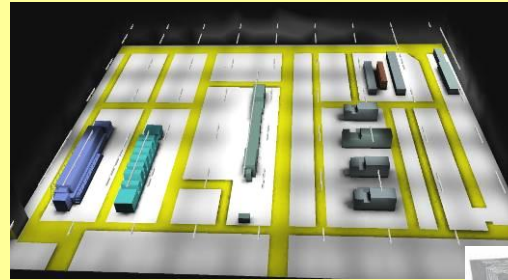
- Lighting consultancy & audits
- Lighting analysis





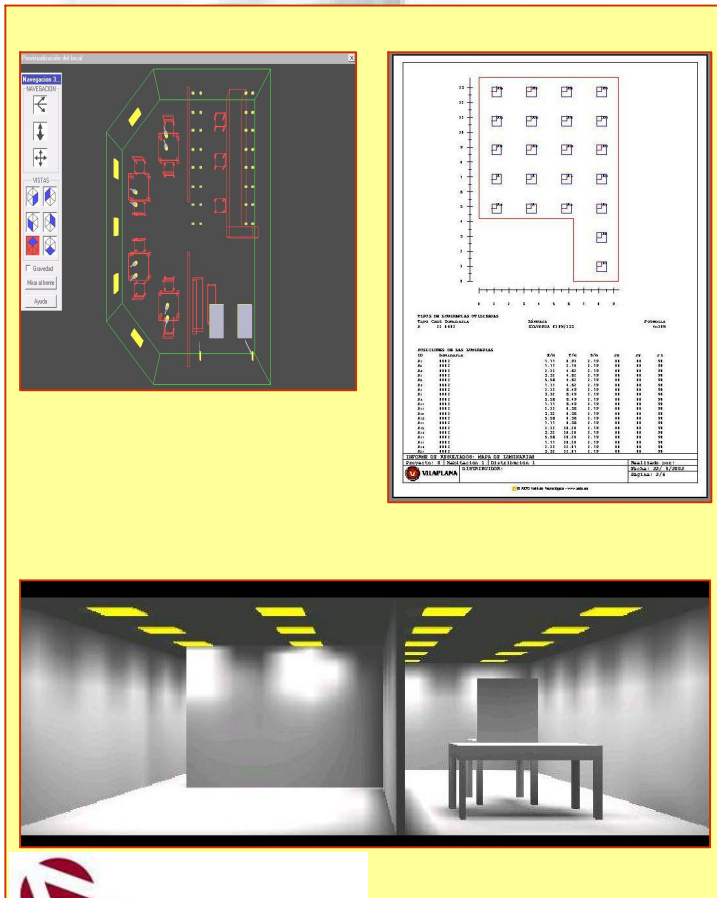
# OPTICAL ENGINEERING

- Lighting project calculation and simulation



# OPTICAL ENGINEERING

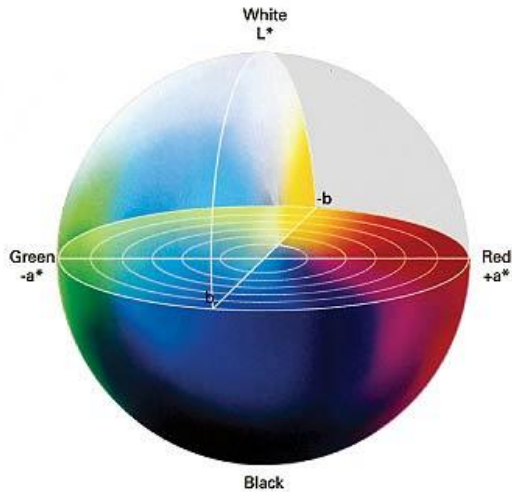
## Lighting simulation software



- Possibility of editing or importing any room of outdoor scene.
- Independent selection of materials and reflectances.
- Lighting systems selection from the manufacturer database.
- Import of any dxf object for real simulation.
- Free configuration of luminaries.
- Calculation of resulting lighting in all the points in the room space.
- 3D photorealistic and navigable representation of results.
- Direct PDF report generation.

# COLOR

## LABORATORY SERVICES



- Metrology. Calibration equipment and standards colour.
- Evaluation of colorimetric measures. Third part.
- Definition internal standards of colour.
- Evaluation and control of vial safety equipments and signals.
- Develop systems control "on line" colour.
- Spectrophotometry Visible, Ultraviolet and Near Infrared.



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OPTICA COLOR IMAGEN  
Instituto tecnológico

# COLOR

## PAINTS



- New developments for liquid and powder paints
- Colour matching
- Paints and inks manufacturing process. Quality control
- Product life cycle studies
- Evaluation of Physic-chemical properties. Ecological requirements



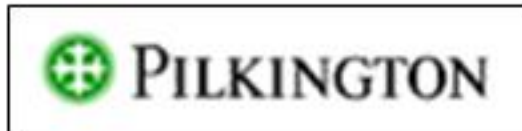
## Industrial quality control: automotive glass inspection

 PILKINGTON



- Our systems control different aspects: print quality and position of trademark, production date code, position and size of drill holes, control of black band and fade band, control of dot spots, control of border chips and scraps.
- Real-time processing with high resolution images (16000 x 20000 pixels, more than 400 MB).
- Our modular systems adapt themselves to the different line conditions.
- Systems in Spain, UK, Italy and USA.

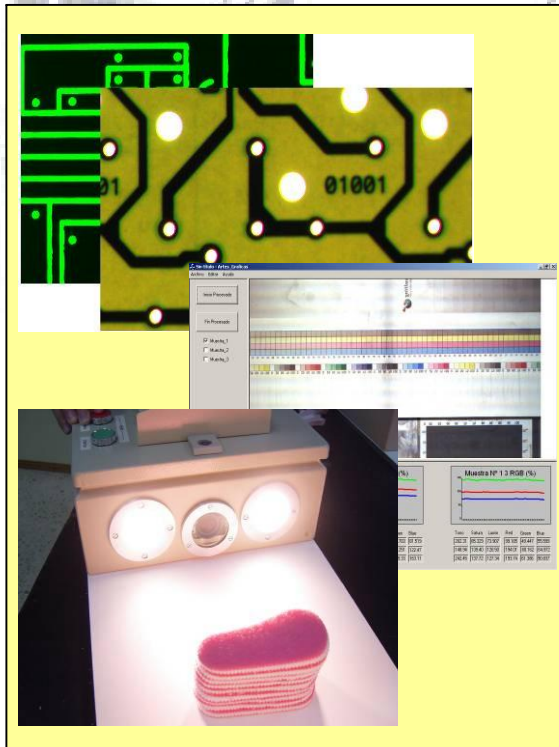
# Machine vision applications: automotive sector



# Other Machine vision applications



## Some other industrial control systems



- **Building industry**: quality control in bricks manufacturing (correct forming of bricks before the oven).
- **Shoe sector**: machine vision system for the correct positioning of pieces, and system for automatic counting in different points of the production line.
- **Environmental control**: surveillance system for coastal marine protected areas, which calculates the position of the ships from a fixed point in the coast.
- **3D calculations**: spatial position of 'conflictive' points in distances till 500 m to make proximity risk analysis outdoors.
- **Building industry**: system for flexion test in security nets.

# LASER

## EXPERTISE



- **Laser System Engineering.**
  - Guiding, shaping and focusing of high power laser beam. Safety in laser systems.
- **Laser applications developments:**
  - Laser material processing
  - Laser metrology
- **Laser beam characterization and monitoring.**
- **Assessment in the use and handling with laser facilities and components.**
- **Training.**
- **Specialized workshops.**



# LASER

## Laser Materials processing



- **Laser cladding**
  - Tools, moulds and part refurbishment
  - Functional layers.
  - Non-metallic materials: glass and ceramic.
- **Laser welding: 2D and 3D parts.**
- **Laser cutting: 2D and 3D all type of materials: metals, plastics, wood, glass, ceramic, natural stone, etc.**
- **Micro-processing and micro-manufacturing: micro-cutting, marking, micromachining, surface-cleaning, etc.**

# LASER

## Laser for the automotive Industry



- Car-body laser welding using robot or remote-welding stations, even aluminum made.
- Hardening of engine parts as camshafts and crankshafts or piston rings.
- Laser trimming of dashboard and other panels inside the car.
- Day&nigh marking of the dashboard keys.
- Tailored blank of car-body parts.
- Airbags trimming on the dashboard.

# AIDO

**AIDO. Instituto Tecnológico de Óptica, Color e Imagen**

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