



## RLT – Remote Lighting Technology –

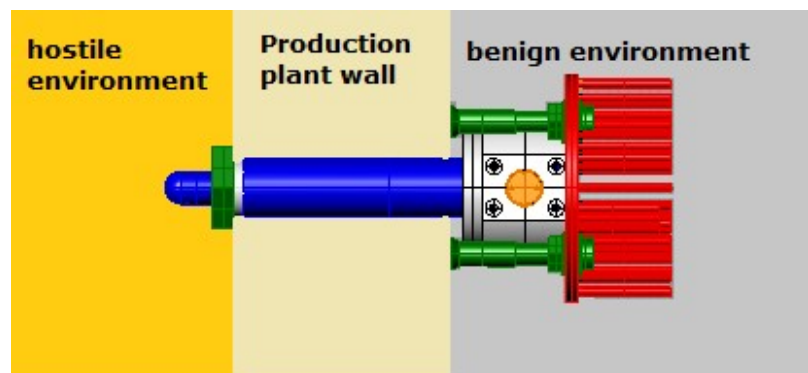
### *Lighting in Hostile and Hazardous Environments*



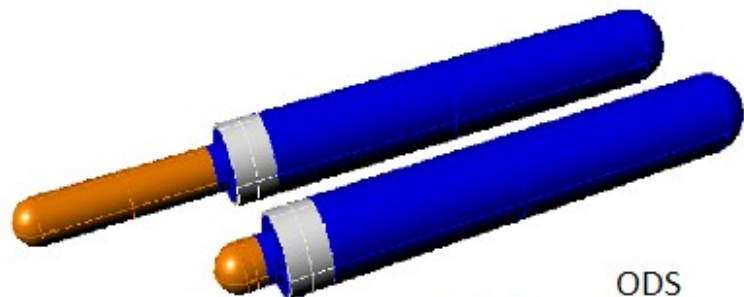
This project has received innovation and research funding from the European Union, Horizon 2020 with a grant agreement n. 694.588

IODA has created and patented a new LED source light system, which is rugged and reliable. LEDs (Light Emitting Diodes) are a solid state light source that have a narrow optical spectrum and are energy efficient. UV (Ultra Violet) LEDs are built in a friendly mercury free, lead free environment and according to RoHS (2002/95/EC rules).

The innovative idea of RLT – Remote Lighting Technology – system is to apply an optical system and a mechanic/electronic body to this LED light source. The light is produced in a safer environment and is delivered in a different optical spectrum (i.e. visible or UV) to hostile, hazardous environments or environments that manifest particular safety and quality requirements, such as the ones required for food production or food processes.



Our innovative idea of a lighting system, delivering visible or UV light with its sterilization action (as it is installed outside the environment to protect materials, such as the ones used in food processing or packaging production line) allows environment savings and environment waste reduction.



**ODS**  
Optical drive system  
by IODA srl

Only an optical cylinder (usually 20 mm long) and a stainless steel flange are present inside the hostile environment.

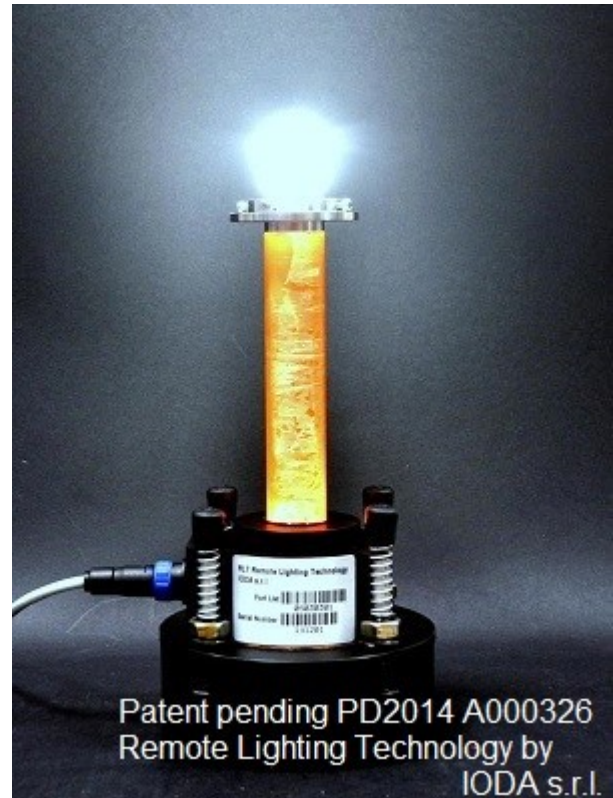
Between the outside structure and the dangerous area there is a glass optical cylinder.

The lighting system RLT meeting the RoHS Directive is 2002/95 / EC. It provides lighting systems in different optical spectrum (eg. visible or UV) in hostile environments or in environments where maximum safety and reliability are required, such as environments containing fluids or poisonous gases, explosives or radioactive materials.



## The benefits of this lighting system are:

- Security: No moving parts and no hazardous gases. The RLT system is the lighting solution proving to be the safest and most friendly available one for the environment in the market. This is particularly important in the areas of food production.
- Temperature is kept constant, as the RLT system does not influence the temperature between the outside and the inside of the room. The glass used is a poor conductor of temperature.
- Working temperature: inside the hostile environment between -50°C to +300°C.
- Energy efficiency, since LED lighting uses between 70 % and 80 % less energy than traditional lighting.
- Light of constant intensity, because light does not decrease over time, differently from other forms of lighting, such as fluorescent tubes.
- Potentially harmful materials or contaminant materials are not inside the hostile room.
- Possibility to manage the spectrum of light emitted in a very detailed way (Ultraviolet, Visible and Infrared light).
- Customizable angular distribution (diffused light or defined light of a peculiar target in the room).
- Fast installation and easy usage in existing plants.
- Efficiency of lighting system, low power consumption and high durability.
- Excellent compactness, both inside the work area, and outside.
- The RLT whole system is IP 68 rating, maximum safety.
- No maintenance is required



Patent pending PD2014 A000326  
Remote Lighting Technology by  
IODA s.r.l.



## **POSSIBLE HAZARDOUS APPLICATIONS :**

- Clear room
- Pharmaceutical production plant
- Dry cleaning plants
- Industrial oven for cooking food
- Wood working plants
- Textile mills
- Cotton gins and cotton seed mills
- Flax producing plants
- Grain elevators and bulk handling facilities
- Manufacture and storage of magnesium
- Manufacture and storage of starch
- Fireworks manufacture and storage
- Flour and feed mills
- Areas for packaging and handling of
- Pulverized sugar and cocoa
- Facilities for the manufacture of magnesium and aluminum powder
- Some coal preparation plants and coal
- Handling facilities
- Spice grinding plants
- Confectionary manufacturing plants
- Petroleum refining facilities
- Ethanol facilities
- Dip tanks containing flammable or combustible liquids
- Petrochemical plants
- Plants manufacturing organic coatings
- Petroleum dispensing areas
- Solvent extraction plants
- Plants manufacturing or using pyroxyle
- (Nitrocellulose) type and other plastics
- Locations where inhalation anesthetics are used
- Utility gas plants, operations involving storage and handling of liquefied petroleum and natural gas
- Aircraft hangers and fuel servicing areas
- Breeding Farm
- Food inspection systems
- Emergency Exit Signes
- Antibacterial industrial washing





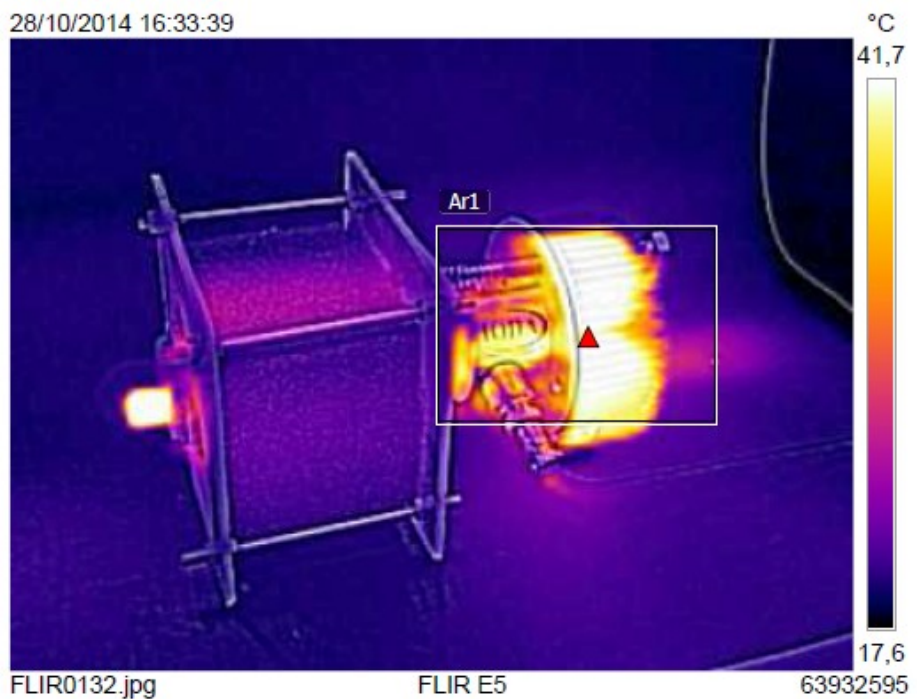
## Test Bench of RLT system

Misurazioni °C 28/10/2014 16:33:39

Ar1	Max	42,8
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### Parametri

Emissività	0.95
Temp. rifl.	20 °C



The test bench of the RLT systems shows the excellent efficiency of the device and the dissipation system as the maximum temperature recorded is less than 42 ° c.

Test mode:

Room temperature 25 ° c.

Temperature measurement performed after 10 hours of ignition.

Led piloted at 105% of the nominal power (in use it is expected to use it in a power line comprised between 70 and 75% of the nominal power).