

115
LED
130
LM/W
HEALTHCARE
AND
CLEAN
ROOMS
RANGE
IP65
UGR ≤ 19

INDELAGUE GROUP

INDELAGUE™

HIGH TECH | LIGHTING SOLUTIONS

ROXO lighting

CONCEPT

CLEAN ROOMS Range

Our new and innovative range for clean rooms environments defines a standard of adequate lighting equipment to places with demanding requirements in what concerns high waterproof resistance, proper luminous performance and adjusted maintenance. These luminaires are designed to be applied in diverse areas as hospitals and surgery rooms, precision engineering for the manufacture of pharmaceuticals products, biological and genetic research facilities,

microelectronics and micro-mechanics industry and even in the food industry. The most recent challenge for clean rooms industrial technologies is the micro technology, and the food industry requires the compliance with the requirements established by the regulatory authorities. It's crucially important that all these very different areas of application have light levels and colour rendering (CRI) suitable for the tasks performed in those same

areas, thus allowing them to be made in the most efficient and safest mode as possible.

Light in the operating room

In surgery rooms, the requirements for particle density, colour rendering and adequate light level, are extreme and absolute. The surgery is a major challenge, and lighting ensures visual interpretation of reliable details, so that the surgeon and his team can make the



LUMINAIRES FOR STRICT AND HIGH LIGHT LEVELS, COLOUR RENDERING AND CLEANLINESS REQUIREMENTS

right decisions quickly. The room should be classified according to ISO class 3, namely, have high levels of hygiene and minimum light level at 1000 lux in the operating theater. So that the surgeon can distinguish the different colour gradations, the colour rendering must be $CRI \geq 90$.

Lighting in the clean rooms industry
In the precision industrial processes,

pharmaceutical industry, biological and genetic research as well as production of micro components, the requirements are demanding, so to protect employees, machinery, products and clients themselves. For these areas are required categories ISO 3 and ISO 6, depending on the type of activity.

Light in the food industry
To prevent bacterial growth in the food

industry is applied regulation in the cleaning processes and production environments. The requirements for the quality of air conditioning, ventilation, employee training and particle density, must comply with ISO 6 category. In this sector, a high light level is required, from 200 lux to 500 lux, and colour rendering must be $CRI \geq 80$.



CONCEPT

4 CLEAN ROOMS Range

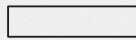
UNIFORM DESIGN IN ALL ITS SPACE

AVT
RANGE

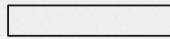
AVAILABLE DIMENSIONS:



600x600 mm

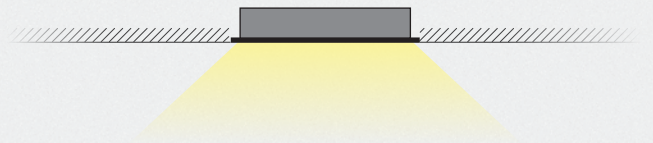


1200x300 mm



1500x300 mm

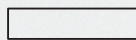
INSTALLATION TYPES:



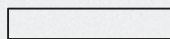
THE
RANGE



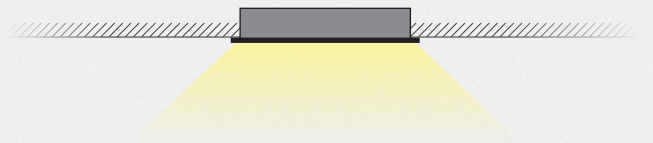
600x600 mm



1200x300 mm



1500x300 mm



The IP65 clean rooms range is based upon 3 types of luminaries, AVT, THE and THS, either possible for LED or fluorescent T5. AVT and THE for recessing, THS for surface mounting. These luminaries are available in 3 standard different sizes.

The recessing range was developed for modular ceilings, with exposed "T" grid of 15/24mm. The AVT without brackets, for recessing from above ceiling by lay-in, and THE with brackets for recessing from below ceiling by pull-up.



THS RANGE



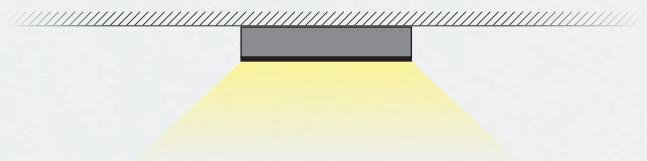
600x600 mm



1100x300 mm (LED)
1200x300 mm (T5)



1360x300 mm (LED)
1500x300 mm (T5)



CHARACTERISTICS / COMPONENTS

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CLEAN ROOMS Range

A WIDE VARIETY OF OPTIONS

In our clean rooms range we combine 3 fundamental requirements with the most recent lighting technologies: particle density and cleaning (IP class), lux levels and colour rendering (CRI).

LED VERSION

The use of the latest LED technology in the AVT LED, THE LED and THS LED, allow us to have high LED standard patterns, such as high lux levels, CRI \geq 90, 50.000h lifetime (L80F10) and a colour stability MacAdam 3 SDCM, making these luminaries the perfect choice for lighting in clean rooms environments. These LED versions has 4000K as standard or 3000K as optional.

HIGH PROTECTION RATING IP65

Simple and compact design, for hermetic or modular ceilings, with high requirements of IP rating.

DSI/DALI CONTROL SYSTEM

Allows simple interface with building management systems, increasing the energy efficiency.



PLAIN OR MICROPERFORATED LOUVRE PANELS

Plain louvre panels in the standard fluorescent T5 fittings, or microperforated louvre panels as available option.

T5 VERSION

Luminaires available in T5 fluorescent version with reflectors PST / PBT / PMT / PBP / PMP and transparent tempered glass or transparent polycarbonate diffuser. Also available with opal polycarbonate diffuser (DOP).

EMERGENCY UNIT

All the standard clean rooms range luminaires have the option of including emergency 1h or 3h units, either in the LED or fluorescent T5 versions.

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LM/W AVT LED

OPTICAL SYSTEM

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CLEAN ROOMS Range

AESTHETICS AND OPTICAL COMBINATIONS

The clean rooms range presents a high luminous output of up to 86%, with the DAM diffuser or with the P-Silver™ double parabolic aluminium louvre. The luminaires are equipped with a large variety of reflectors and/or diffusers, in glass or polycarbonate, which allow them to obtain a high luminous efficiency (η). These luminaires can be used in health care areas, pharmaceutical productions areas, and microelectronics industry and food industry areas, among others.

DAM

MICROPRISMATIC DIFFUSER

Choose the microprismatic diffuser (DAM) with the latest micro-pyramidal technology where you can match modern design with maximum energy efficiency. The DAM diffuser uses this optical technology to divert light into the correct place allowing high LOR and UGR<19 to comply with EN 12464-1 lighting of work places.

PST

P-SILVER™ DOUBLE PARABOLIC LOUVRE WITH TRANSPARENT TEMPERED GLASS

Choose the reflector/diffuser PST for an exceptionally superior performance and to obtain a very high reflection (98%), which allows a higher light range. The aluminium used in this reflector has a 99,99% purity level, allowing an exceptionally superior efficiency, and complying then with the norm EN 12464-1.

PBT/PBP

POLISHED DOUBLE PARABOLIC LOUVRE WITH TRANSPARENT TEMPERED GLASS / POLISHED DOUBLE PARABOLIC LOUVRE WITH TRANSPARENT POLYCARBONATE DIFFUSER

Choose the reflector/diffuser PBT or PBP for an exceptional performance, high efficiency and glare control. The aluminium used in this reflector has a 99,85% purity level, which allows us higher efficiency, complying then with the norm EN 12464-1.

PMT/PMP

SATIN DOUBLE PARABOLIC LOUVRE WITH TRANSPARENT TEMPERED GLASS / SATIN DOUBLE PARABOLIC LOUVRE WITH TRANSPARENT POLYCARBONATE DIFFUSER

Choose the reflector/diffuser PMT or PMP for an exceptional performance, high efficiency and glare control. The satin/matt aluminium used in this reflector avoids reflection interferences in the reflector itself, complying then with the norm EN 12464-1.

DOZ/DOP

OPAL POLYCARBONATE DIFFUSER

Choose the opal polycarbonate diffuser (DOZ/DOP) for modern style and low maintenance cost.



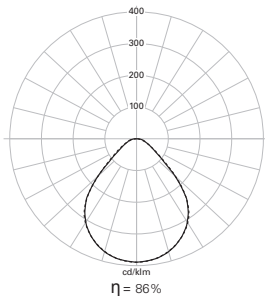
DAM

DOZ / DOP

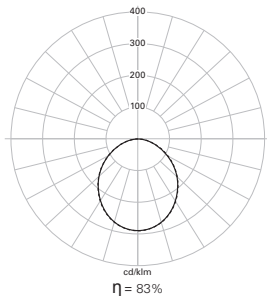
PST / PBT / PBP

PMT / PMP

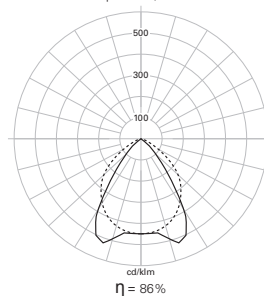
AVT LED 4x10W DAM
LED



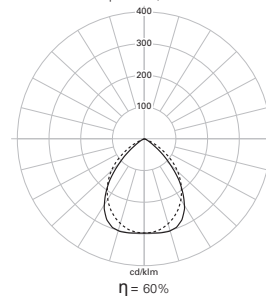
THE LED 4x10W DOZ
LED



AVT 4x24W PST
Lamp: 4x24W/840 HO



THS 4x24W PMT
Lamp: 4x24W/840 HO



CEILING TYPES

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CLEAN ROOMS Range

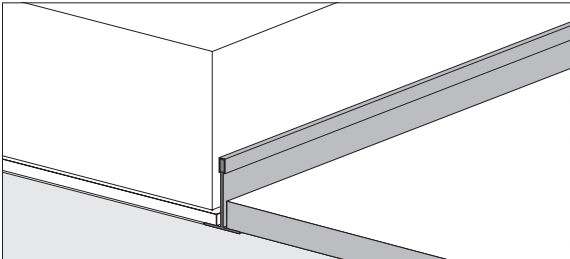
THE ADEQUATE
SOLUTION FOR
EACH APPLICATION

The versatility of the clean rooms range allows it to be compatible with a wide variety of applications and modular ceiling systems, made available by the main ceiling manufacturers.

Installation details on other types of ceilings under request.

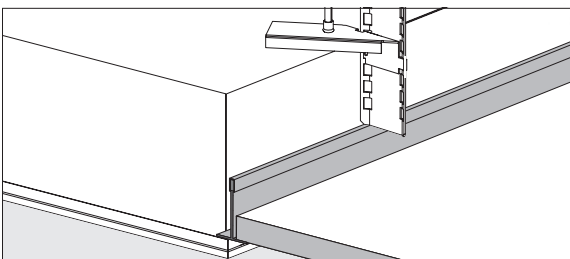
AVT | RANGE

15/24mm LAY-IN

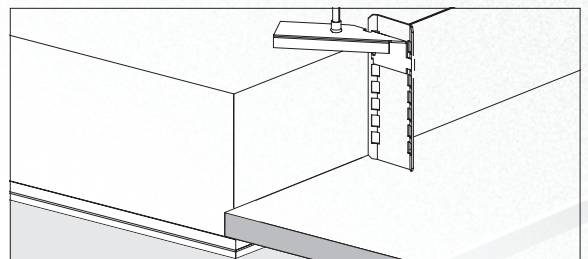


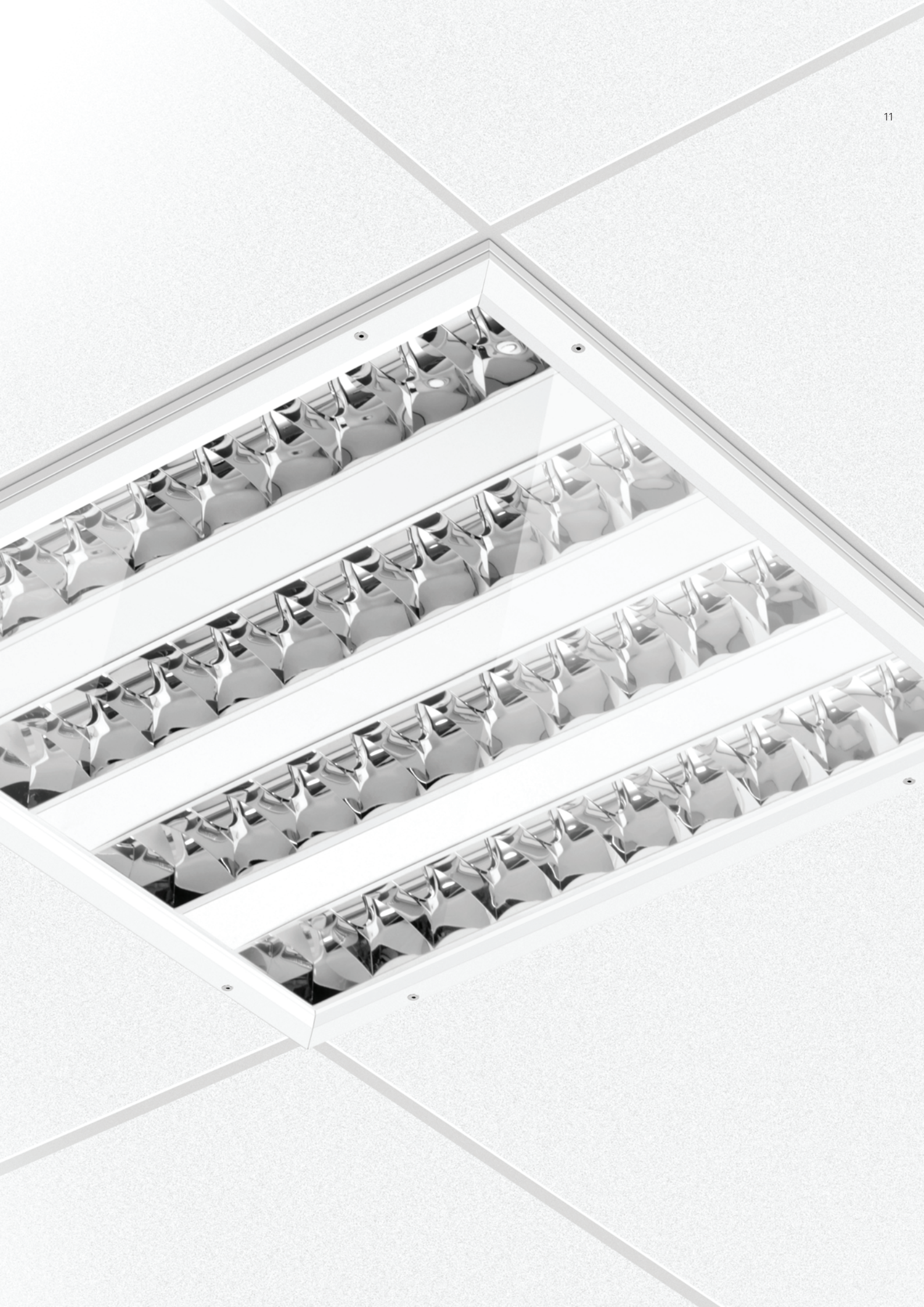
THE | RANGE

15/24mm PULL-UP



BRACKETS FOR PLASTERBOARD CEILINGS





INSTALLATION / MAINTENANCE

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CLEAN ROOMS Range

AVT AND THE COMPLETELY IP65 AND WITH ABOVE CEILING ACCESS

The AVT and THE luminaires, for fluorescent T5 lamps, were conceived in order to have the possibility of above ceiling access. They have a simple and compact design, for hermetic or modular ceilings, with high requirements of IP rating (IP65). When the luminaire is sealed, all surfaces are plain and smooth, so to be easy to clean and disinfect.



PLUG & PLAY CONNECTORS AND EMERGENCY UNITS

When developing the products for the clean rooms range, we also considered the need for a quick and easy installation and/or maintenance, either in the LED or fluorescent T5 versions.



CONNECTORS



Wieland 5 poles GST18i5 DIM



Wieland 5 poles GST18i5 or Wieland 3 poles GST18i3

EMERGENCY UNIT



Hamad General Hospital, Doha (Qatar)





Brigantia Ecopark - Science and Technology Park, Bragança (Portugal)

ROOMS CLEAN CARE RANGE

LED 115 Lm/W
UGR<19
P65

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