



RAPTOR EVOLUTION



INDEX

Raptor Evolution	03
Comparison Table	04
Specifications	05
As standard components	05
Structure	06
Front Doors	06
Service Doors	06
Grids or Metal Basement	07
Lighting	08
Control Board	09
Control Board Main Features	10
Inverter System	11
Inverter and Main Switch	11
IR System	12
Infrared at Medium Wave	12
IR System Benefits	13
Heating Systems	14
Electric Battery	14
Hybrid System	14
Energy Saving	15
Heat Recovery Device	15
Security Systems	16
Electrovalve	16
Visual and Acoustic Alarm	16
Conformation	17
Unit on the Ground	17
Integrated Units	17
Raptor Evolution Benefits	18
More Advantages of Using Electric	19
Differences in Consumption	20
Awards	21
Gallery	22

RAPTOR EVOLUTION

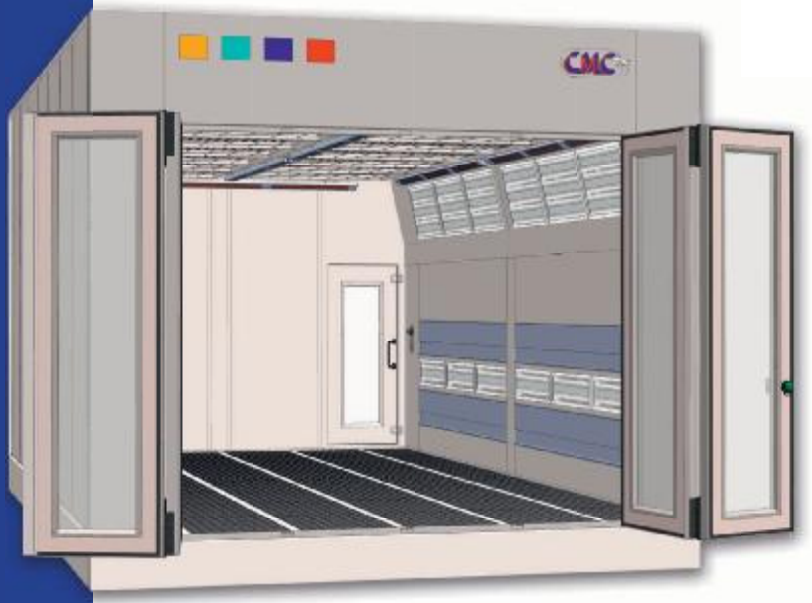
The Fully-Electric Spray Booth

High Performance, Infrared System and cutting-edge technology. Our flagship product. Raptor Evolution was primarily aimed at combining technological innovation, environmental sustainability as well as consumption and cost reduction.

THE BENEFITS OF USING ELECTRIC

- Flexibility
- More Efficiency
- Reduction of Working Time
- Cost Reduction
- Energy Consumption





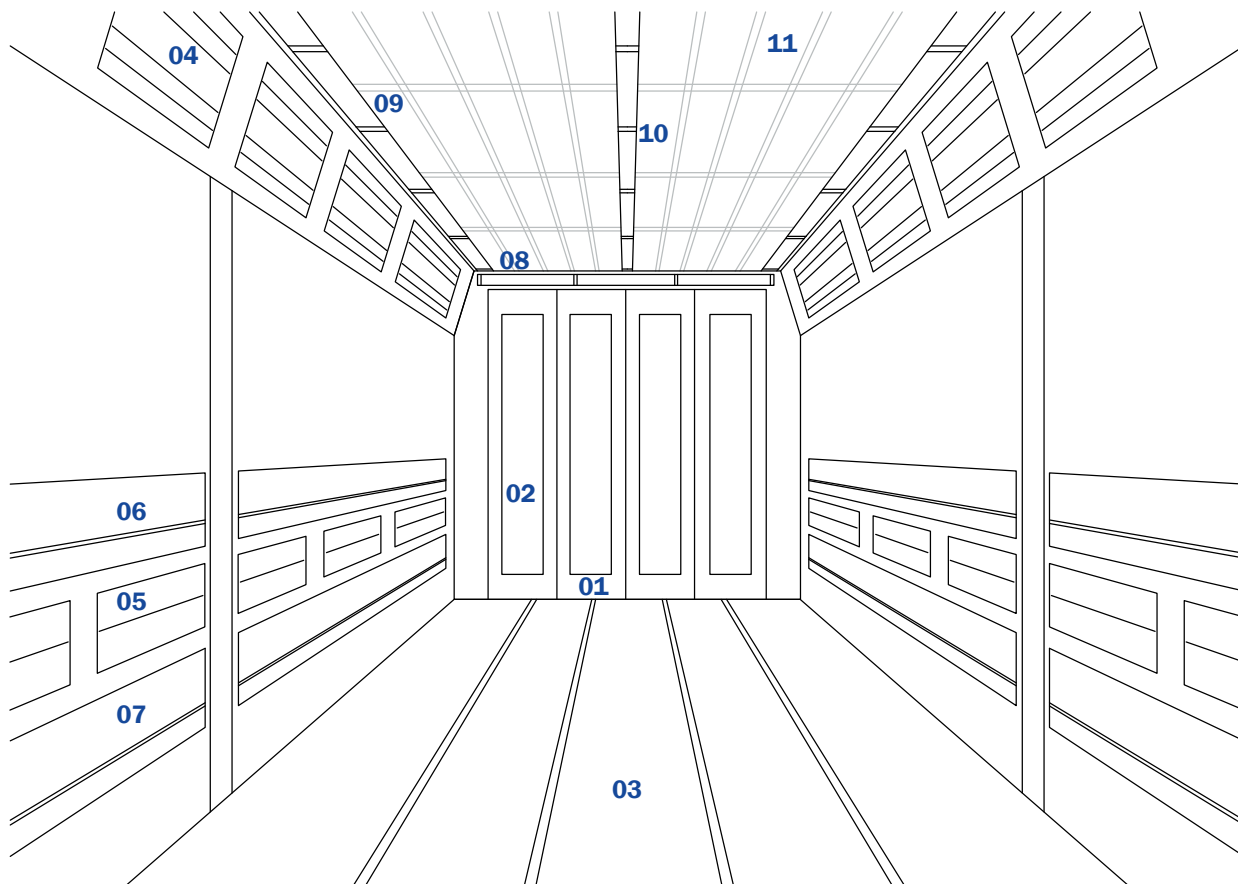
COMPARISON TABLE

Comparing Models.
A complete overview for understanding what are the standard components and the optional elements for each Spray Booth.

✓ STANDARD ○ OPTIONAL ✗ NOT AVAILABLE

	EVOLUTION	PLUS	STEALTH	TCF	PIPER	STRATOS
Inox	✓	○	○	○	○	○
White	○	✓	✓	✓	✓	✓
55 mm Insulated walls	✓	✓	✓	✓	✓	✓
Basement as an alternative to Grids	○	○	○	○	○	○
Mangusta Window	✓	✓	○	○	○	○
Frontal door 4 wings	✓	○	○	○	○	○
N° 1 Service Door	✓	✓	✓	✓	✓	✓
Cornet Top Lights	✓	✓	✓	✗	✓	✗
Horizontal top lights on the Wall	✗	✗	✗	✓	✗	✗
Lower Lights on the Wall	✓	✓	✓	✓	○	✗
Vertical Lights	✗	✗	✗	✗	✗	✓
Additional Lights on the Rear Wall	✗	✗	○	○	○	○
LED Lamps System Philips 12W	✓	○	○	○	○	○
Infrared Kit	✓	✓	○	○	○	○
Insulated Roof	✓	✓	✓	✓	○	✓
Control Board Touch display 15"	✓	○	✗	✗	✗	✗
Control Board Touch display 10"	✗	✓	✗	✗	✗	✗
Control Board Touch display 5.7"	✗	✗	○	○	○	○
Automatic Control Board	✗	✗	✓	✓	✓	✓
Compressed Air Distribution	✓	✓	✗	✗	✗	✗
Airflow Detecting System	✓	○	✗	✗	✗	✗
Electric Battery	✓	✓	○	○	○	○
Warm Water Battery	○	○	○	○	○	○
Burner Gas/Gasoli	○	○	○	○	○	○
Direct Burner	○	○	○	○	○	○
Inverter System	✓	✓	○	○	○	○
Setting System	✓	○	○	○	○	○
Heat Recovery Device	✓	✓	○	○	○	○
Possibility to install Units on the roof	○	○	○	○	✗	○

SPECIFICATIONS



01 Frontal Door 4 wings

02 Managusta Window

03 Total/Partial Grid or Basement

04 Corner Top Lights

05 Lower Lights on the wall

06 IR with safety protection

07 IR with safety protection

08 IR frontal and rear

09 IR lateral on the roof

10 IR central on the roof

11 Insulated Plenum roof

As Standard Components



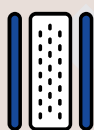
INOX



CONTROL BOARD
TOUCH 15"



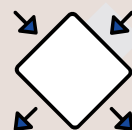
LED PHILIPS
12W



55 mm
INSULATED WALLS



ELECTRIC
BATTERY



HEAT RECOVERY
DEVICE



SETTING
SYSTEM



INVERTER
SYSTEM

STRUCTURE

Front Doors

In the Raptor Evolution implant, the portals can be open with a manual system or automatic control.

The automatic opening can be done through the Touch Screen Control Board or a dedicated switch.

According to customer's needs, the portals can be

with three wings or four, for both cases, we install big glasses Mangusta type.

These windows allow greater visibility inside the spray booth.

C.M.C. offers the possibility to personalize the finishing among two options, INOX or WHITE.



Service Doors

Also the service doors as well the portals can be in two different finishing INOX or WHITE.

Also, in this case, the glasses are wide so as to ensure full visibility inside the spray booth.



Optional
Handle Cisa 620



Grids or Metal Basement

Raptor Evolution includes full grids on concrete works with frames under the grids with adjustable downdraft flow. The grids have 700 kg load capacity per wheel print 200 x 200 mm.

It is also possible to install a metal basement on concrete works. The basement comes with central and perimeter supports to hold the grids and the frames under the grids with adjustable downflow.

In case it is not possible to execute concrete works there is the possibility to install the spray booth on an external basement, in this case, entry ramps are necessary. The ramps can be external, internal, and internal pneumatic.

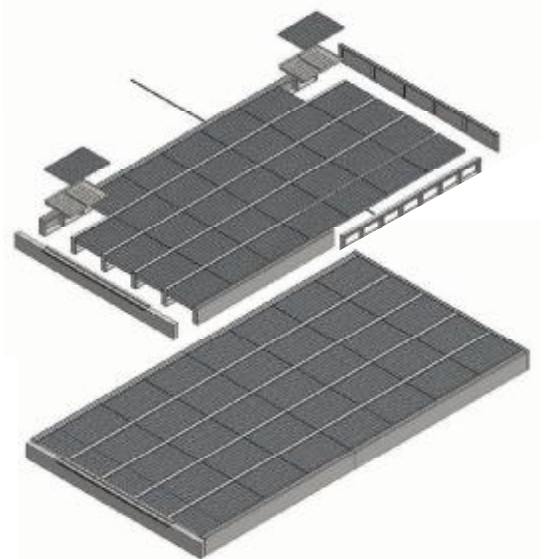
For specific cases, it is possible to install grids with higher load capacity until 1.000 kg per wheel print 200 x 200 mm.



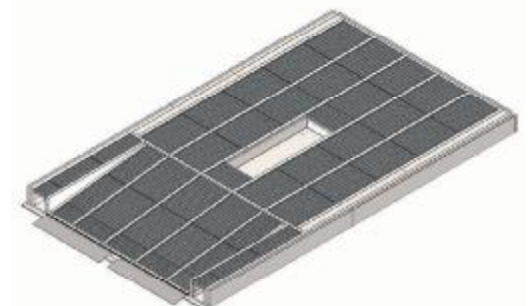
Full grids on concrete works with frames under the grids with adjustable downdraft flow.



Partial Grids on concrete works



Full basement on concrete works



Full basement with pneumatic ramp and compartment for the paint lift.

Lighting

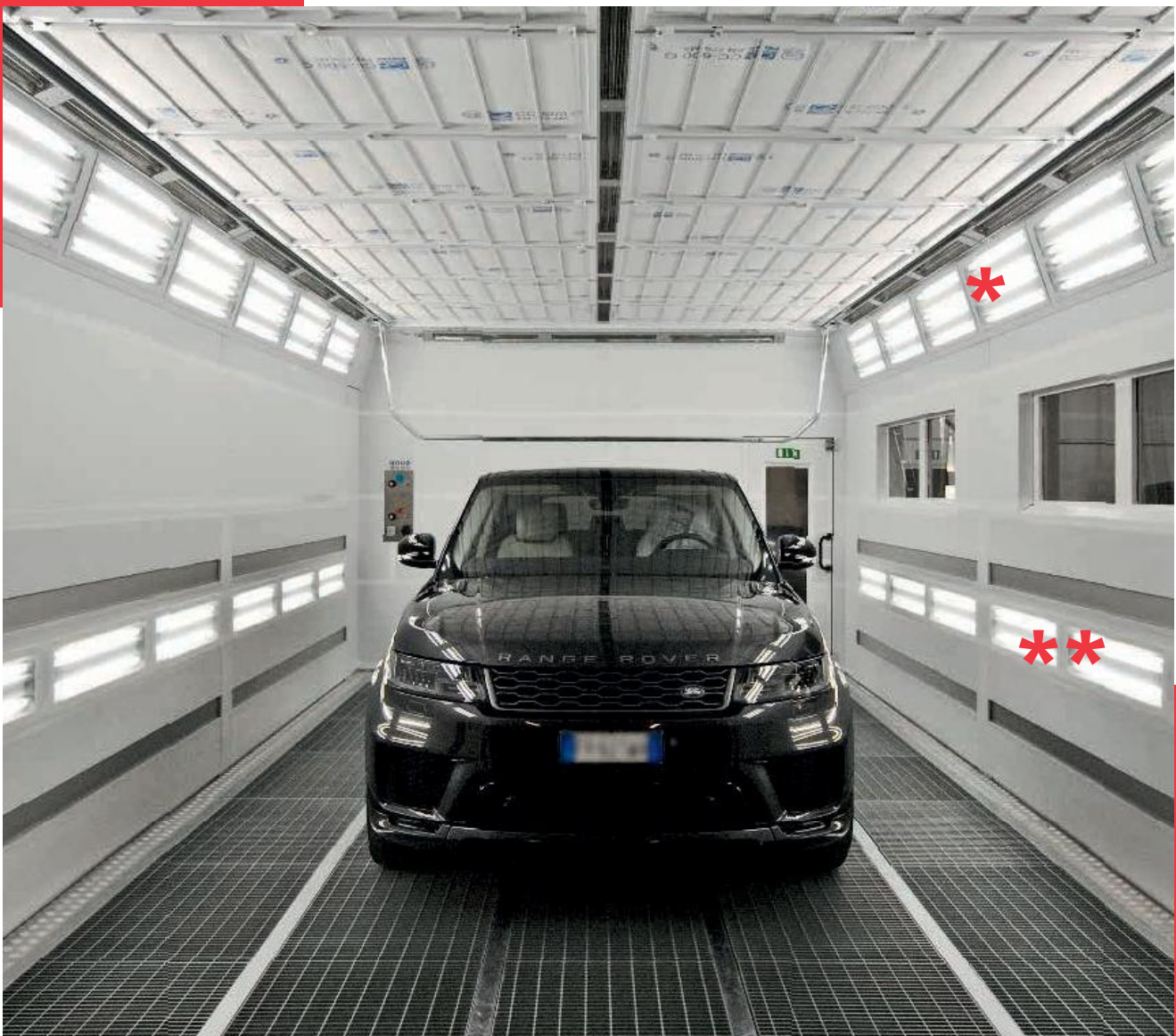
The corner top lights and the lower lights on the walls guarantee an optimal view in every corner of the spray booth.

A good illumination allows precise painting and total accuracy. The lighting facilitates the detection of defects, areas not covered with the

primer, streak typical from light metallic paint, and connection areas.

In the corner ceiling lights, there are 6 LEDs of 12 W each, while in the lower lights on the wall there are 2 LEDs of 12 W.

- * Lighting system corner top lights 6 x 12 W LED
- ** Lower lights on the wall 2 x 12 W LED



CONTROL BOARD

Touch Screen Control Board with Web Server 15"



01 Automatic booth pressure control

07 Operating mode selector

02 Position of IR system guards

08 Programming of SETTING - active filter ceiling

03 Temperature of the object to be painted

09 Operation indicator

04 Measurement of absorbed power

10 Air flow measurement (aria)

05 Measurement of air temperature

11 IR system setting

06 Operation timer

12 Graph check of operation cost

Control Board Main Features

The touch screen panel has been developed in collaboration with a team of paint technician to make it as efficient and user friendly as possible.

The interface is simple and intuitive, it facilitates programming and modifying the presets according to the procedures applied and the products used.

The IR lamps can be activated by sectors meeting the requirements during the processing. This function allows reducing costs and time.

According to the needs, it is possible to activate only some areas inside the spray booth and exclude some others.

Raptor Evolution has also a network card for remote assistance. By simply connecting an ethernet cable it is possible to communicate remotely with CMC assistance.

Thanks to this service, correct defects and modifying the software become super easy and quick.



Trought the touch screen control board of 15" it is easy to select the IR lamps to enable, so this feature will reduce costs and time.



INVERTER SYSTEM

Inverter and Main Circuit Breaker

The INVERTER system installed in the Raptor Evolution booth allows to adjust the airflow in all the operating phases.

This system guarantees an appropriate airflow during all the activities carried out inside the spray booth.

The inverter system installed in the Raptor Evolution reduces considerably the energy consumption

The Inverter system allows to:

- Adjust the pressure inside the booth automatically.
- Reduce the electric energy consumption by up to 34%.
- Reduce current absorption peaks.
- Avoid sudden pressure changes within the booth.
- Reduce the mechanical stress of motor / fan coupling.



Main circuit breaker which combines the following functions:

- Circuit protection against short-circuits.
- Circuit protection against overload.
- Control and insulation of electrical circuits.
- Protection of persons against direct and indirect contact.
- Installation protection against differential faults.

IR SYSTEM

Medium-Waves Infrared Radiations

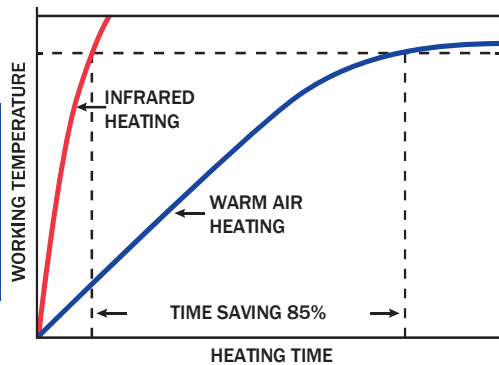
One of the best methods of transferring heat is infrared radiation.

The infrared radiations are categorized according to the wavelength emitted.

Generally, all the detachable systems like arches, semi-arches, and suspended lamps work with shortwaves, Raptor Evolution instead, works with MEDIUM-WAVES.

Medium-wave rays are the ones that best manage to mediate between the intensity of energy transmitted (linked to exposure time), and reflection (linked to the distance of use and the type of material radiated).

The infrared lamps with medium waves installed in the Raptor Evolution spray booth are characterized by high speed in reaching the operating temperature, and by equally rapid cooling after powering off.





The IR system (lamps) fitted into the sidewalls of the booth is protected by special guards which open and close automatically based on the operating phase set via the control panel.

IR System Benefits

- FLEXIBLE POSITIONING

Since the lamps are integrated into the structure, this allows a more flexible vehicle positioning.

- UNIFORM FINISHING

The temperature reached by the medium-wave rays during the drying phase guarantees a deep reticulation. This ensures excellent results and uniform finishing.

- ENERGY SAVING

The use of electric power and the considerable reduction in machining time allows a decrease in expenses and, consequently, a long term exponential profit.

This means a considerable increase in productivity and decrease in consumption.

Spraying phase - Closing guards of IR system



Flesh period and Baking - IR system guards open



HEATING SYSTEMS

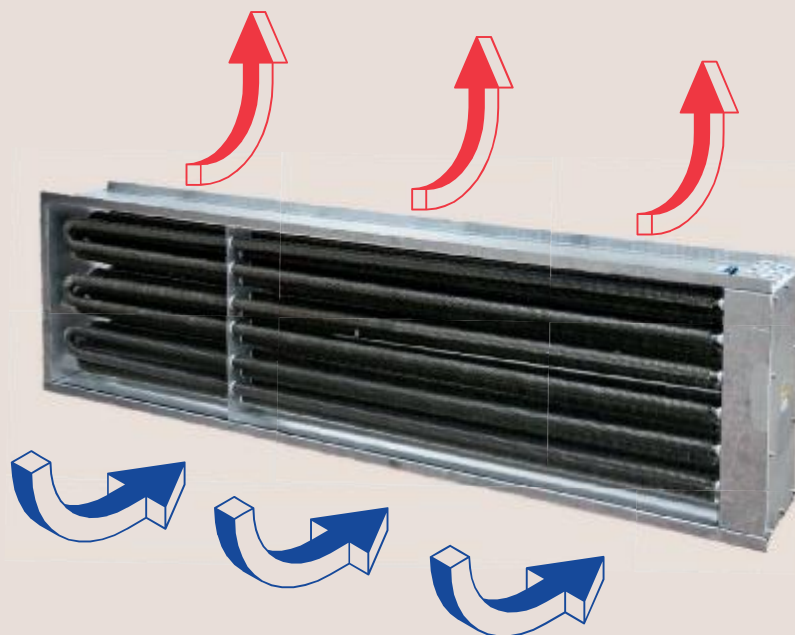
Electric Battery

The Electric heater with 3 vertical row coils is provided with finned heating elements to optimize thermal exchange.

Installed in the air inlet ducting, it allows preheating the air sucked from outside before

being conveyed into the filter ceiling of the booth.

The electric battery is provided with connecting flanges to the ducts and a box for electrical connection.



Hybrid System

In the Raptor Evolution spray booth, it is possible to include a hybrid system.

The hybrid system allows the addition of a burner or a warm water battery. This allows to carry out the baking phase with the Infrared system or the traditional one (hot hair).

ENERGY SAVING

Heat Recovery Device

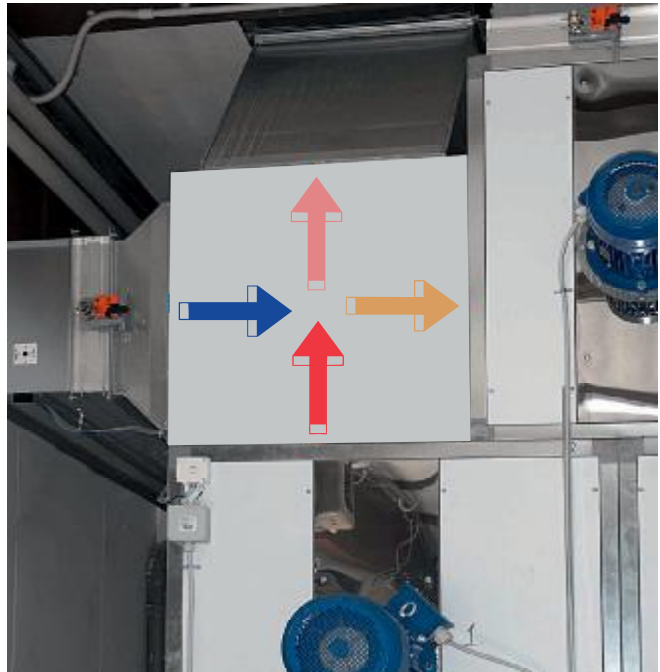
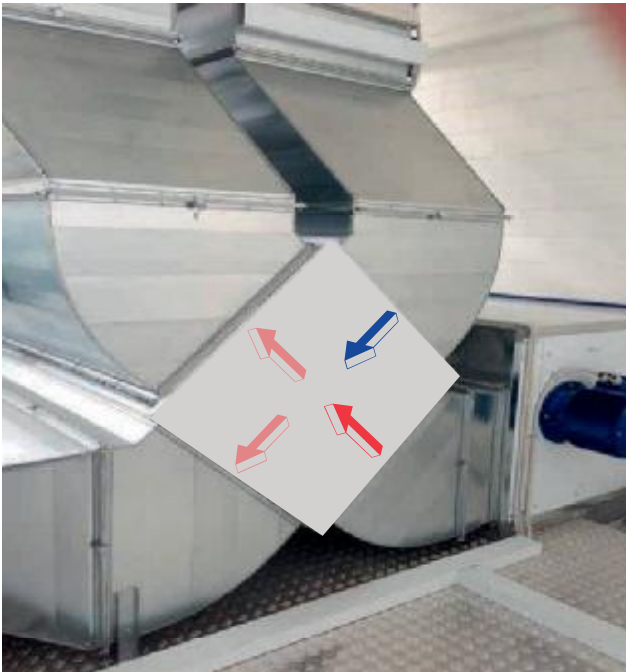
To save energy Raptor Evolution install a static-type plate recovery unit without moving parts with air to air heat exchanger. This element ensures the highest level of reliability and safety of operation.

The cross-flow air motion allows to achieve high efficiency with consequent reduction of energy

consumption.

When installed in the spray booth, it allows recovering heat from the outlet air by transferring a considerable part of it to the air getting into the booth during all the operating phases.

For these reasons, we can lower down the thermal power installed.

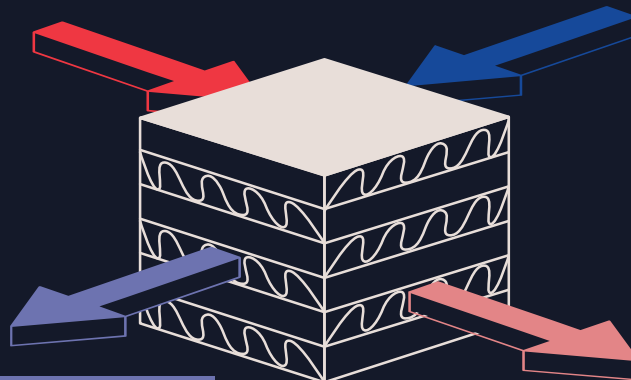


OUTLET AIR

EXTERNAL SUCTION

INLET AIR INTO THE BOOTH

OUTLET AIR RELEASED OUTSIDE



SECURITY SYSTEMS

Electrovalve

It is possible to manage the use of the compressed air thanks to the installation of an electrovalve. The compressed air is managed, during the spraying phase, thanks to the

interblock inserted in the electrovalve. The electrovalve is installed before the manometer and the compressed air system.



01 Electrovalve



02 Manometer



03 Compressed Air

Visual and Acoustic Alarm

Our Raptor Evolution includes a luminous and acoustic alarm column fitted in the top corner inside the booth.

The column is protected by a safety glass installed on a metal frame.



* Pressure probe located inside the spray booth

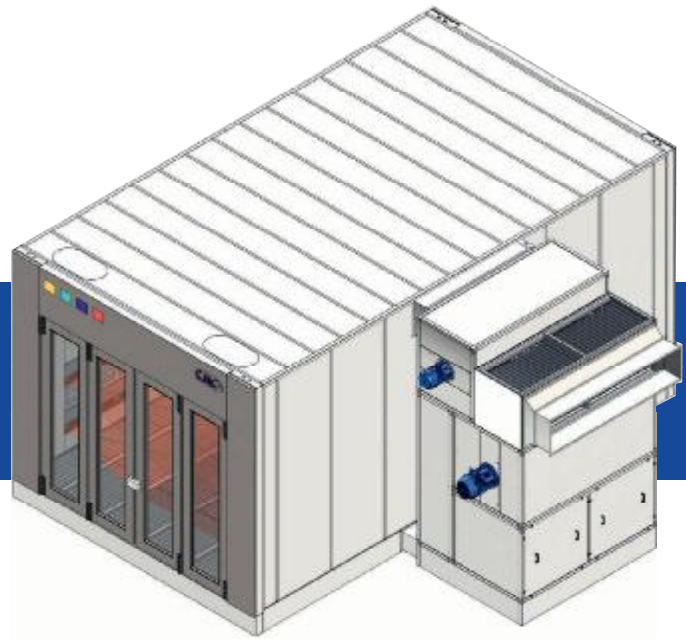


- Correct operation
(The operator is allowed to be in the booth)
- Operation fault
(Flashing and acoustic alarm)
- Closing guards of the IR system
(Flashing and acoustic alarm)
- Guards of the IR system open
- Doors open
(Front and/or service door)

CONFORMATION

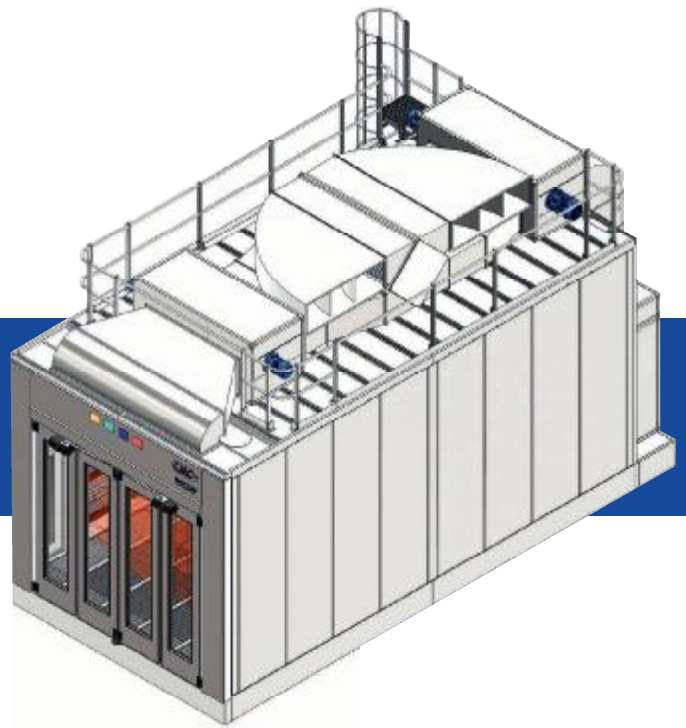
Units on the Gound

The units that include motors, certified ATEX fans, dual efficiency filter system, heat recovery unit, intake channels and armored electric coil can be positioned on the side of the spray booth or in the rear.



Integrated Units

The units that include motors, certified ATEX fans, dual efficiency filter system, heat recovery unit, intake channels and armored electric coil can be positioned on top of the spray booth. The structure of the spray booth is self-supporting so it is not needed to install additional supports. In a configuration with integrated groups, is required the inclusion of protection and accessibility systems such as parapets, maritime ladders, and anti-slip walking surfaces.



RAPTOR EVOLUTION BENEFITS

It is more than a product, It is a challenge

Raptor Evolution represents the evolution of a combined painting/drying booth that merges advanced performance and sustainability in order to improve energy consumption by exploiting adequate power in the specific operating phases.



FLEXIBILITY



EFFICIENCY



**TIME
REDUCTION**



**ENERGY
SAVING**



More Advantages of Using Electric

The Raptor Evolution model, being completely electric, does not require a burner.

This statement is no longer valid when the spray booth includes the hybrid system.

The advantages of not having burners are:

- The spray booth can be installed with groups inside the room.
- There is no need to install a thermal room.
- Firefighter practices are simplified.



Differences in Consumption

Based on tests carried out, a system equipped with an IR system compared to a traditional one has numerous advantages aimed at increasing productivity and reducing consumption.

PRODUCTIVITY

An electrical system allows you to perform 6 daily cycles of 80 min. compared to the 4 cycles of 120 min. of the traditional system. This causes a consequent increase in productivity of 50%.

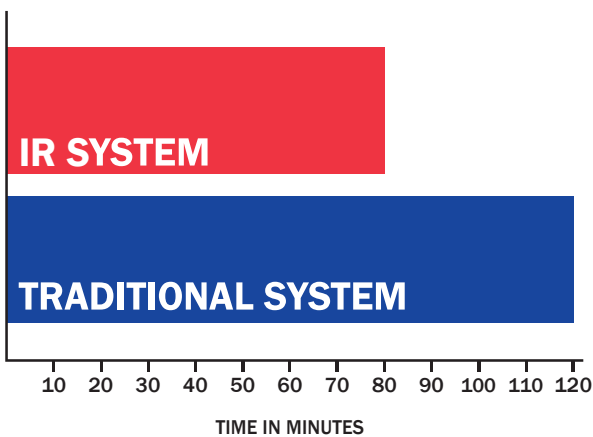
CONSUMPTION

An electrical system allows savings in energy consumption of 54% for each operating cycle. This is also possible thanks to the possibility of activating the IR lamps by sectors, without having to operate the entire spray booth.

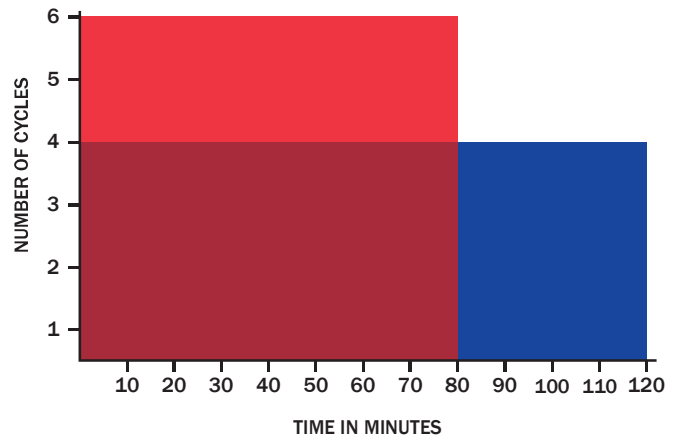
EXPENSES MONITORING

Through the touch panel, it is possible to check and monitor the costs incurred for the realization of every single operation.

TIME NEEDED TO COMPLETE A WHOLE CYCLE*



N° OF COMPLETE CYCLES IN A WORKING DAY*



AVERAGE ANNUAL COST FOR N° 1 OPERATING CYCLE*



IR SYSTEM



TRADITIONAL SYSTEM



DATA CALCULATED TAKING INTO ACCOUNT THE AVERAGE ANNUAL TEMPERATURES IN ITALY

AWARDS



The Raptor Evolution spray booth, a source of pride for our company, has been selected and awarded with the “International Grands Prix for Automotive Innovation Gold Trophy”.

This innovative project was presented in collaboration with the ITALCAN company during the EQUIP AUTO fair held in Paris from 15th to 19th October 2019.



GALLERY













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