

## CATALOG FOR OBSERVATORY DOME



Some of the constructions we do are the observatory domes of hemispherical type of various diameters; it can be installed directly from a support or base that allows the entry from the bottom of the structure.



**Example of dome installation, diameter 240cm over a roof.**

The dome can be done with a cylinder base build with an entry door, the cylinder is 200cm tall to respect the general rules of the doors, but it could be constructed with the dimensions wanted according to the mode of use programmed.

This cylinder will be at the same time the rotation base of the dome.

## HEMISPHERICAL

New technique of construction creating parts to assemble, the sheets are cut and drill with laser technology. The mechanical parts are in general preassembled and prepared to install in a practical way without welding: The installation of the dome can be done in a variable time it could be hours or days depending on the diameter.



The construction of the structure in rotation and the base it's done in galvanized metal pipe then it's covered with aluminum sheets. The color of the dome can be chosen according to different proposals of the RAL which are offered to clients.

The opening of the dome is two side sliding doors from the base until the zenith of itself (approximately 20% of diameter) the opening with the doors opened is approximately 32% of diameter.

The rotation of the dome comes through an electric motor that feeds on direct current with battery or power supply or it can be moved manually. The dome is built in 4 parts (lower cylinder, upper dome, two opening doors) for models of **2.4mts. It's constructed to disassemble in several parts (subdivisions of the dome and cylinder plus the two opening doors)** for larger diameters. The number of sections depends on the diameter of the dome and is projected to realize a faster assembly.

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Domes are constructed to be installed and uninstalled in a fast mode of any type of construction that is holding it (ceilings, platforms, etc) designed also to be **used as a temporary structure so it's easily removable, thanks to the way of construction and light weight. For this reason we don't fix the parts in a rigid way.** All joints are fixed through screws maintaining the necessary safety of the installation.

The dome comes equipped with an electric drive for rotation and a keyboard command for the 2 movements (clockwise and counterclockwise) also can be unlocked so it can rotate manually (in case of emergency or lack of electrical current).



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## INTERIOR FINISH

The interior finish as a rule **it's** made with fire resistant material type felt carpet with 3mm thick, fire safety certificated. The result is a pleasant, warm and welcoming place which reduces the possibility of direct condensation since the felt lining prevents direct exchange with the metal and retains residual humidity. The color normally used is black or dark gray.

You can request the following colors for the interior finish: light gray, dark gray, electric blue, midnight blue, blue, red, green and black. You can use combinations of 2 or more colors.



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## **SETTING UP FOR MANAGEMENT CONTROL AND AUTOMATED**

The system consists of mechanical and electrical preparation and mechanisms for the automatic movement of the dome.

Gear motor with encoder connected to indicate the pass (intervals between 0.6 and 1 degree)

The control is electronic with a button that commands the movement of rotation in both directions and to open and close the dome, besides the connection to manage the automatic system.

It can be opened in any position, being an electronic system equipped with radio command feeding the engines an autonomous opening it will be rechargeable with a solar panel. The movement will be carried out by electric DC motors with stop to open and close.

The operating philosophy of the dome is this: The dome has a parking position (home) chosen according to the need and logistics operator. The electric opening of the doors will be made independent of the position of the dome (The direction of the position will be chosen by the customer) (Azimuth).

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## COMMANDS AND ELECTRONIC CONTROLS OF THE DOME FOR AUTOMATION

Electronics for the motor control and movement through the computer equipped with a program management in ASCOM platform (Columbia dome – our software) adaptable to almost all software planetary for telescopes. This type of application in combination with the appropriate software allows the use (of the telescope and dome together) of the observatory in remote control with remote administration through the internet.

The software manages the dome and its movements open its doors with a button (for the command of electric movement) and through the computer the panel of virtual control that comes equipped, also starting position. Once installed the dome will be connected to the telescope and will follow the position of azimuth during movement of itself.

Of course, to be released completely from the presence of persons at the place, help a certain number of sensors (humidity, air, camera of visual control, etc) connected to the electronic control of the dome. The financial offer of this part will be studied if you **are interested, the reason is because it's necessary to set a specific procedure about the philosophy of the operation and install the software to the internal processor that comes attached to the electronic card.**

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## ISOLATION

The isolation is carried out with a fireproof material, Styrofoam type (flame retardant) of at least 2cm thick covered with a material type felt carpet fire certificated. The result is a nice, warm environment with a perfect isolation and without any possibly humidity residue.



Example of intern isolation



## CYLINDER SUPPORT

The cylinder is used to install the dome on a flat base, has an entry door (see photo) and hooks to attach the structure to the ground made of galvanized steel pipe covered with aluminum sheets of the same type of the dome.

Are provided with internal finish made of fireproof material (fire retardant) felt carpet with a minimum thickness of 3mm, fireproof certificated. The left facer prevents direct exchange with the metal and retains humidity.

You can request the following colors for the interior finish: light gray, dark gray, electric blue, midnight blue, blue, red, green and black. You can use combinations of 2 or more colors.



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## COVERAGE IN OTHER MATERIALS

All domes can be covered in stainless steel or copper or thicker aluminum it's possible the construction of the whole structure and inside frame in stainless steel.

**FOR INFORMATION AND REQUESTS:  
CALL THE FOLLOWING NUMBERS  
CALL CENTER: +39 0532-746291  
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