

# Housings and Domes

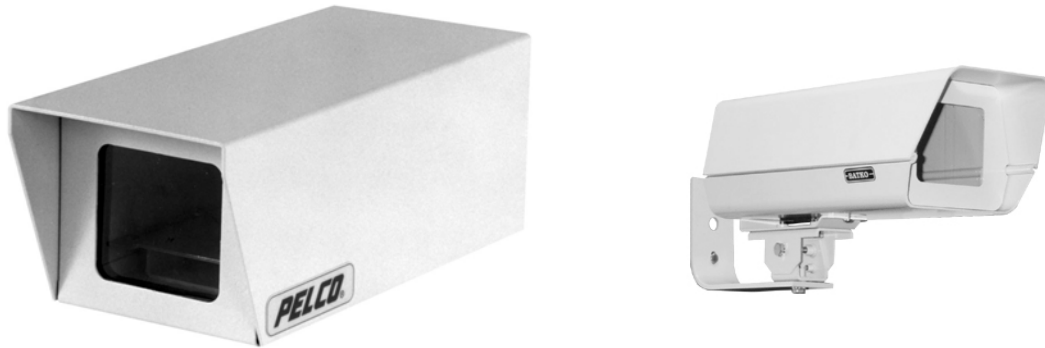
Housings and domes are used to protect cameras from the environment, tampering, and damage. They may also be used to conceal the camera for covert observation. Housings are generally a metal or plastic covering designed to protect a single camera. Domes generally consist of a transparent or semi-transparent plastic lower dome that allows the camera to view out, and a metal or plastic upper body that supports the dome.

## Housing Types

Several factors must be considered before selecting a housing for a particular camera. The main factor is mounting. Location and mounting arrangement are critical to the selection of the housing and mount used. The housing must be large enough to support the camera and lens (and any other items you wish to put inside the housing). Most vendors list a housing's internal dimensions on the specification sheet. If the housing requires power these requirements must also be considered and a suitable power source must be located within wiring distance of the housing.

## Housing Types – Interior Wall Mount

Interior wall mount housings provide light duty protection from environment, tampering, and damage. Some units are supplied with a mount; some units require a separately sold mount.



## Housing Type – Ceiling Mount

Ceiling mount housings are typically wedge shaped. Ceiling mount housings are available for hard ceiling and drop ceiling applications. Hard ceiling units are designed to fasten directly to the ceiling. Care should be taken to assure that the housing is securely attached to the ceiling support structure. If the cabling cannot be feed through the ceiling some units support surface conduit connections. Drop ceiling units are designed to be cut into a ceiling tile or to replace a tile altogether. Tile replacement units may come with the tile replacement, or it may be sold separately. Replacing the tile gives added flexibility to the aiming of the housing.

## Ceiling Mount Housings



Hard Ceiling Housing



Drop Ceiling Housing



Tile Replacement Plate



Completed Drop Ceiling Installation

## Plenum Ceilings

When installing drop ceiling housings the installer needs to check if the ceiling is a plenum ceiling. Plenum ceilings allow return air to come to the room directly from the ceiling space rather than through a duct. This type of ceiling requires the use of a plenum rated back box, and not all ceiling housing back boxes are plenum rated.

## Housing Type – Corner Mount

Corner housings are designed to mount in the corner of the room. By locating the camera in the corner the widest possible coverage of the room can be achieved.

Corner mounting also provides additional mounting security because there is less to grab onto.



#### Housing Type – Vandal Resistant

Vandal resistant housings provide extra protection from tampering or damage. These housings are usually constructed of thicker, heavier duty materials than normal housings. The viewing windows are usually made of Lexan® or other heavy duty clear material. This style of housing is common at detention and prison facilities.



#### Housing Type – Environmental

Environmental housings provide protection from environment (heat, cold, moisture), tampering, and damage. This housing type may also include internal environmental

controls to keep the camera and lens at optimal temperature.



### Housing Type - Specialty

Specialty housings can provide protection from a number of environmental factors. Specialty housings can protect a camera from extreme heat like in a furnace or steel mill; or they can protect from extreme cold like a freezer. They can be pressurized to keep out contaminants like dust and salt. They can be sealed to make them suitable for explosion prone environments. They can be ballistic rated so they resist being shot by a pistol or a rifle.

### **Dome Types**

The factors for selecting a dome are basically the same as those for selecting a housing. Location and mounting arrangement are critical to the selection of the dome and mount used. The dome must be large enough to support the camera and lens (and any other items you wish to put inside the housing). Most vendors list a dome's maximum

internal dimensions on the specification sheet. If the dome requires power these requirements must also be considered.

### Dome Light Loss

Domes are available in clear, tint, and mirrored lower domes. Clear domes have very minimal light loss. Tinted domes can make the camera more covert, but have up to 1 f-stop light loss. A 1 f-stop light loss means the light available to the camera is reduced by 50%. Some vendors offer tinted domes with a clear viewing slot for the camera to look through. These domes have minimal light loss, just like a full clear dome. Mirrored can make a camera completely covert, but may lose up to 2 f-stops (75%) of the available light.

### Dome Types – Wall Mounted

Wall mounted domes have a plastic lower dome assembly attached to an upper dome assembly that is attached to a wall mount from the top or the side. Wall mount domes may include additional hardware for mounting to poles rooftops.



## Dome Types – Ceiling Mount

Ceiling mount domes may be flush mount, surface mount, or pendant mount. Flush mount domes have the lower dome below the ceiling and a back box or support assembly above the ceiling. Flush mount domes are typically used in drop ceiling applications and may be cut into the tile or use a tile replacement panel. Surface mount ceiling domes have all of the dome and back box mounted directly to the ceiling. This style of dome is typically used in hard ceiling applications. Pendant mount domes are typically spherical and are suspended from the ceiling by a pole. Pendant mount domes are common in high ceiling applications, where the physical mounting may be very high, but the dome location needs to be low and close to the action.



Flush Mount Drop Ceiling Dome



Surface Mount Ceiling Dome



Pendant Mount Dome

### Dome Type - Vandal Resistant

Vandal resistant domes have heavy-duty lower domes and heavy-duty upper bodies to protect them from damage. Some vandal resistant domes are available that support any camera, but most are sold as a package with a camera included.



### Dome Type – Environmental

Environmental domes provide protection from environment (heat, cold, moisture), tampering, and damage. This dome type may also include internal environmental controls to keep the camera and lens at optimal temperature.



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**CCTV System Design & Installation**

By Charles Aulner and Bryan McLane

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