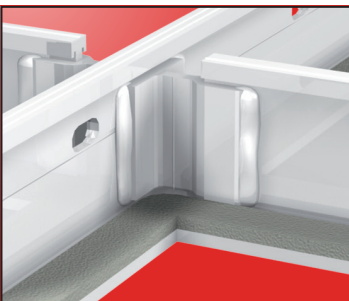


# HDCR Series

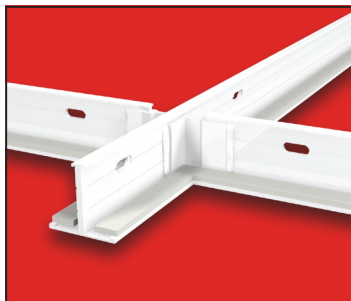
## HEAVY DUTY WELDED CEILING SYSTEMS

HDCR Series was developed to provide the market with a heavy duty suspension ceiling system to support diffusers, fill-in panels, and light fixtures in a variety of critical environments. HDCR offers a superior barrier between the room and ceiling plenum, while also simplifying installation with pre-welded sections.

Fully welded, room-specific solutions for the most demanding applications.



Fully Gasketed Tee Bar to maximize the room seal



Paint finish tested for resistance to hospital cleaners and disinfectants



All systems are fully-welded and custom designed for each unique application



Recommended for hospital operating & isolation rooms, pharmacies, and laboratories

# Ceiling Systems HDCR Series



## Heavy Duty Welded Grid Ceiling System w/Integral Gasket

### Product Information

#### Design Objectives

HDCR Series is a heavy duty suspension ceiling system with gasket that prevents air leakage between the ceiling plenum and the occupied space below, thereby preventing the flow of contaminants into or out of the clean zone.

The HDCR is designed with heavy duty extruded aluminum T-bars factory welded in large sections. The sections are to be bolted or clipped together in the field by others. Maximum available size of a section is 10' x 5'.

Plaster perimeter ceiling is recommended for ease of installation.

#### Applications

HDCR Ceilings can be used for pharmaceutical labs, semiconductor manufacturing, hospital laboratories, isolation rooms, and hospital operating rooms - any situation demanding strict clean air control.

#### Finish

The standard finish for HDCR Series includes:

- White Powder Coat (B12)
  - Clear Anodized (AC)
- Other finishes are available upon request.

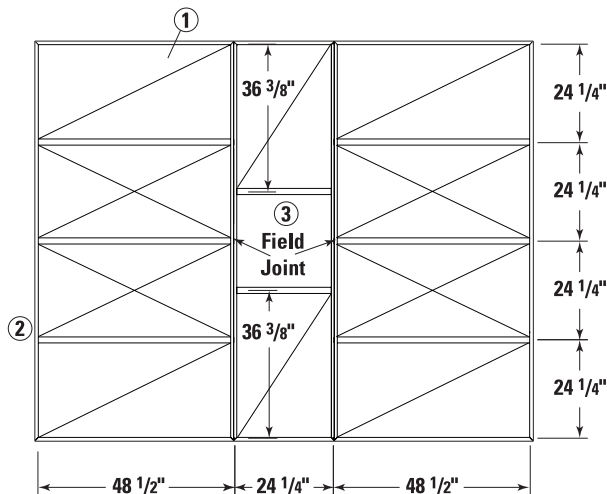
#### Ceiling Panels

Painted metal panels are available in various styles to suit the application and match adjacent diffusers.

#### Features/Benefits

- Heavy duty construction.
- Durable 1 1/2" Wide x 1 9/16" High x 1/8" Thick aluminum extruded profiles.
- All connections factory welded.
- Easy assembly with a choice of factory supplied bolts or "U" spring clips (Bolts Recommended).
- Factory installed continuous gasket (optional).

#### Example Layout:



- ① Typical Lighting Fixture
- ② Typical Diffuser
- ③ Infill Panel

Dimensions are oversized 1/8" per foot to account for thicker T profile. This allows standard module size products such as lights and diffusers to fit the grid.



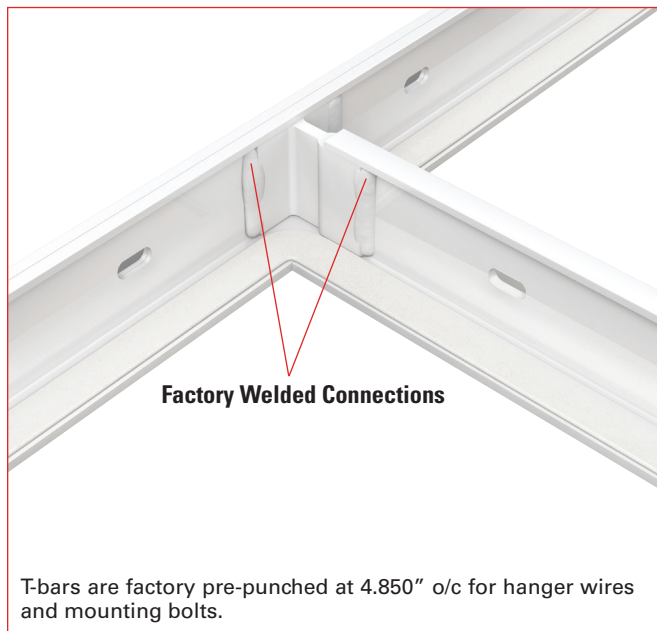
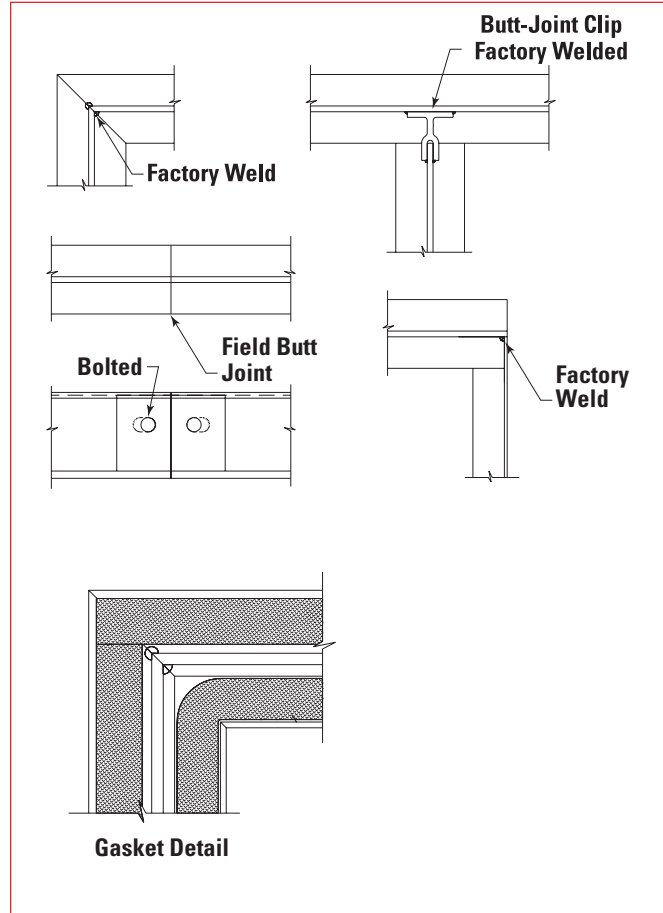
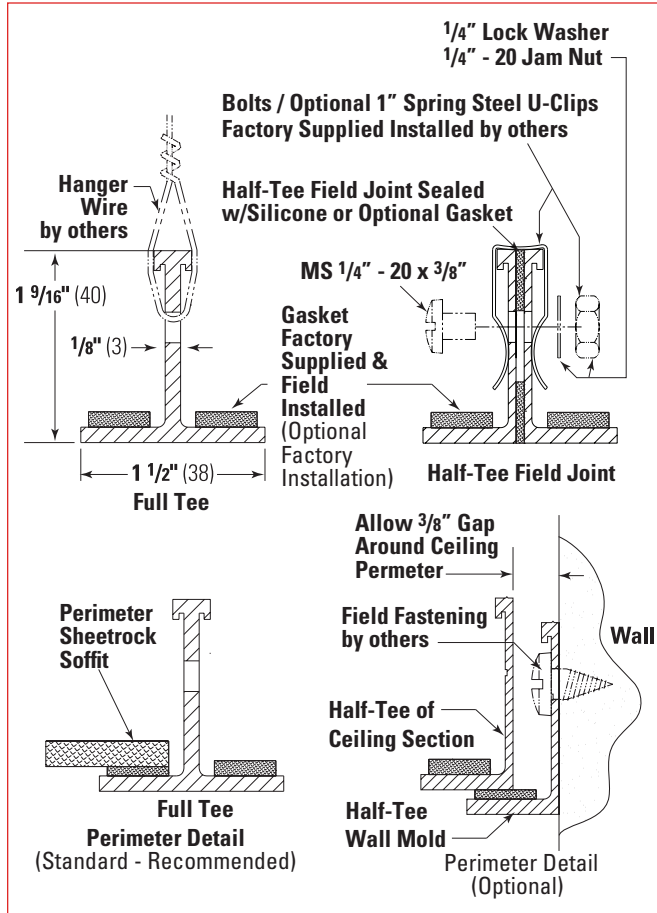
CRITICAL ENVIRONMENTS

# Ceiling Systems HDCR Series



Heavy Duty Welded Grid Ceiling System w/Integral Gasket

## Components



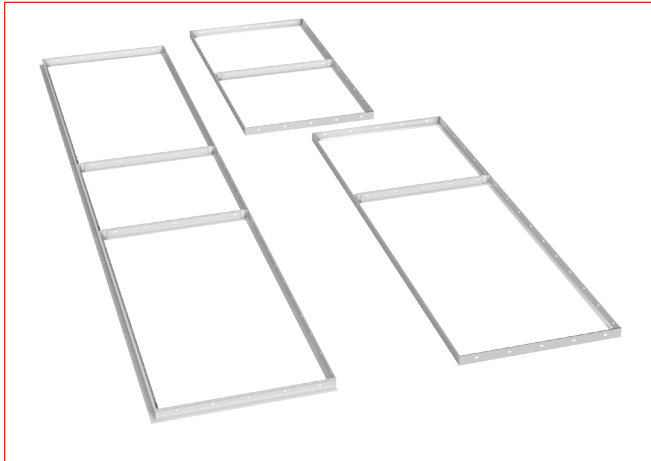
CRITICAL ENVIRONMENTS

# Ceiling Systems HDCR Series



## Heavy Duty Welded Grid Ceiling System w/Integral Gasket

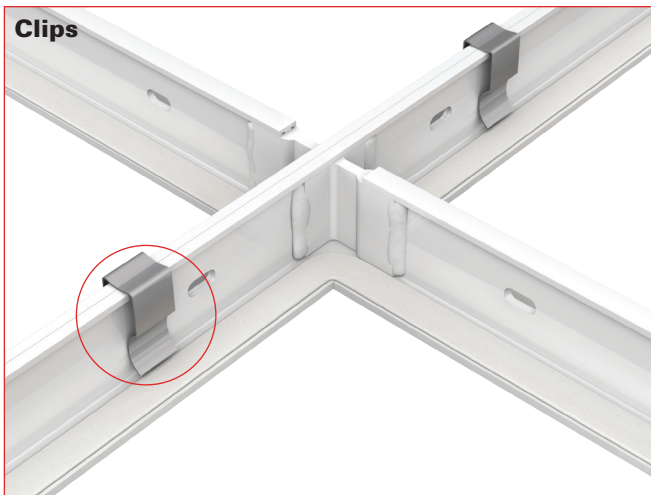
### System Details



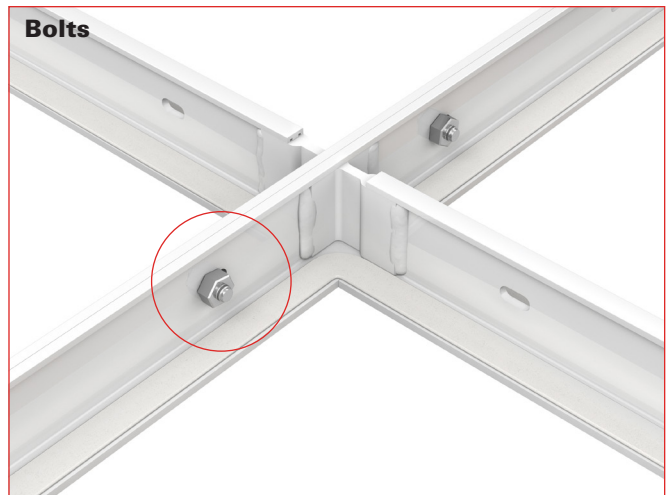
HDCR is manufactured in large factory-welded sections, with a maximum size of 5' x 10' available. Various configurations are available. Corners are heli-arc welded with reinforcing brackets welded in where required to add strength and hold right angles.



Gasket is applied in the field by others for superior sealing ability. Optional factory installed gasket is available.



**Clips**



**Bolts**

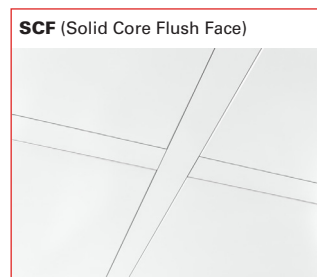
Sections are to be field assembled with either heavy duty spring U-clips or bolts as chosen by the customer. (Bolts Recommended)



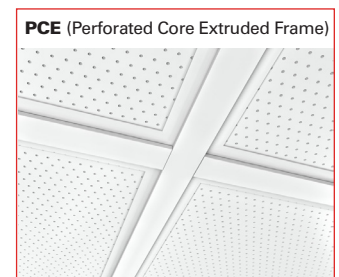
**SC (Solid Core)**



**SCE (Solid Core Extruded Frame)**



**SCF (Solid Core Flush Face)**



**PCE (Perforated Core Extruded Frame)**

All panels come with factory supplied hold down clips for attachment.

# Ceiling Systems HDCR-IS



Heavy Duty Welded Grid Ceiling System with Integrated Unistrut®

## Product Information

**HDCR-IS** include integrated Unistrut® to facilitate the delivery of large volumes of laminar air flow through ceilings between structural equipment supports found in catheterization labs and hybrid operating rooms. The ceiling is precisely dimensioned to accommodate medical equipment tracks, lights, access panels, fill-in panels and booms. Unistrut® used to support the equipment tracks is integrated with the HDCR ceiling, which seals the room from the ceiling plenum above.

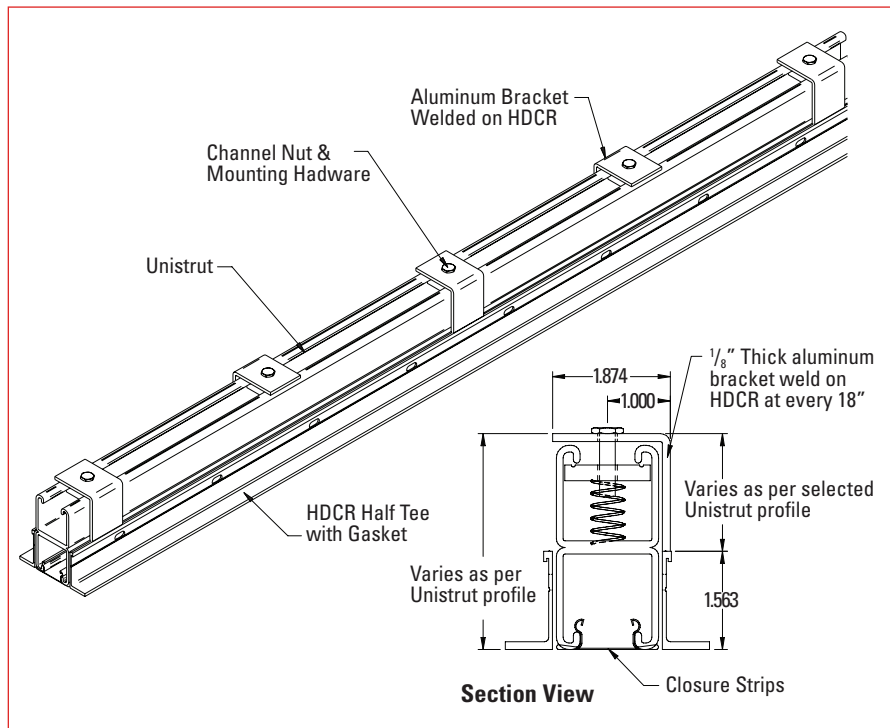
Price Industries provides a single point of responsibility by providing all diffuser, ceiling and Unistrut® components, while also preparing detailed submittal packages for trouble-free installations. The result is a system meeting all hospital requirements from a single manufacturer.

### Applications

- Catheterization labs
- Radiology rooms
- Hybrid operating rooms
- Any room with ceiling-mounted equipment tracks that requires laminar flow

### Features & Options

- Custom-engineered system components including ceiling-level Unistrut® rails for mounting equipment
- Integrates equipment, laminar flow diffusers and heavy-duty framing for a sealed ceiling system
- Fill-in panels for access to ceiling plenum
- Laminar flow diffusers, with or without HEPA filters
- Optional finishes available



CRITICAL ENVIRONMENTS

# Ceiling Systems HDCR-PL



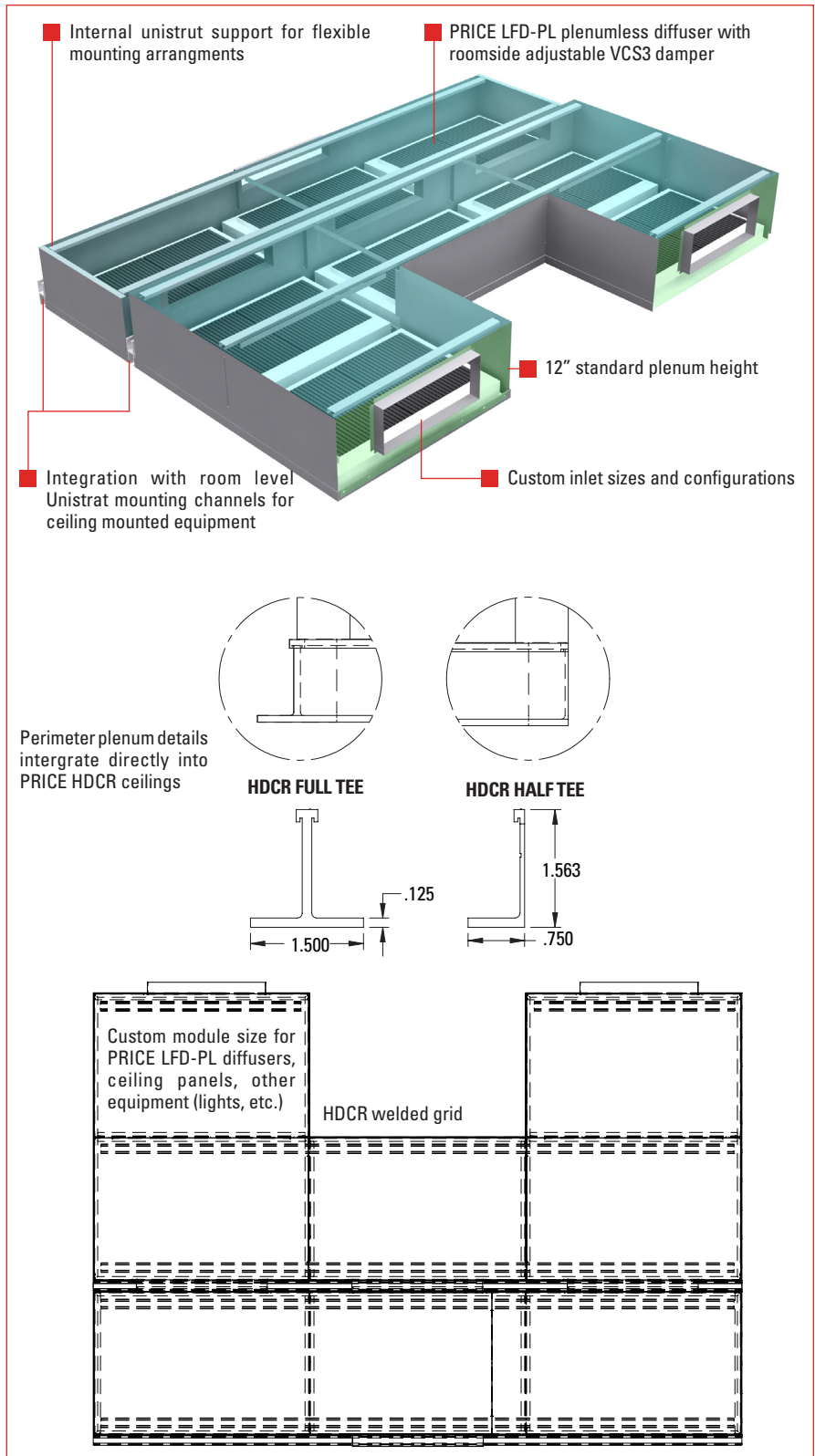
## Heavy Duty Welded Integrated Plenum System

### Product Information

The **HDCR-PL** is an integrated plenum design incorporating multiple diffusers resulting in a system with significantly fewer duct connections. By pressurizing the common plenum, equalized flow is achieved across the face of every laminar flow diffusers included in the system. The HDCR-PL is ideal for use in areas that demand high capacity air distribution but have cost & space restraints. Reduced ductwork and labor savings are key benefits of these systems.

#### Features & Options

- Fewer duct connections, structurally rigid design results in considerable installation savings
- Problem-solving custom configurations to allow for ceiling mounted equipment and other obstructions
- All components with matching finish for aesthetically pleasing solutions
- Laminar type unidirectional flow
- Optional fill-in panels for internal access
- Low profile plenum (12" depth) maximizes ceiling space for additional equipment and minimizes obstructions
- Roomside removable diffusers for easy installation and maintenance



CRITICAL ENVIRONMENTS

# Ceiling Systems HDCR-PL

Heavy Duty Welded Integrated Plenum System



## Installation Example

**HDCR-PL**

**Section 1**

**Section 2**

**Section 3**

**8" x 20" inlet**

**8" x 20" inlet**

**Section 1** - 48" x 145.5" x 12"  
**Section 2** - 24.25" x 60.63" x 12"  
**Section 3** - 48" x 145.5" x 12"

**Standard Construction:**

- Unitee HDCR 1.5" Wide Face Tee - Fully Welded
- 14 Ga. Aluminum Plenum
- Foil Backed Insulation (External)
- Internal unistrut support for ceiling suspension

**Finish:**

- B12 White Powdercoat Finish.

**Installation Notes:**

- Larger Plenums Are Supplied In Multiple Sections For Field Assembly
- Installation And Mounting Is The Responsibility Of The Installer
- Install as per ASTM C636.

CRITICAL ENVIRONMENTS

## Ceiling Systems

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### **HDCR - Heavy Duty Welded Grid Ceiling System w/Integral Gasket**

- The air diffuser manufacturer shall furnish extruded aluminum ceiling suspension system to support air diffusers, fill-in panels and light fixtures. Ceiling tees should have a 1.5" face width and 1.563" overall height. Minimum wall thickness of full tees shall be 0.125" width with a minimum weight of 0.45 lbs. per linear ft. (full tee). All tee and half tee extrusions should include channels along the top of the stack to support hold-down clips for fill-in panels.
- The ceiling suspension system shall be provided as factory heli-arc welded sub-assemblies not larger than 5'x10'. Framed sub-assemblies shall be butt together along the half tees of the sub-assemblies perimeter. Adjacent sections shall be mechanically fastened together with factory supplied bolts or spring steel U-clips.
- All tees and half tees shall be pre-punched on 4.85" centers for attachment to minimum 12 gage pre-stressed suspending hanger wires on maximum 48" centers. Systems shall be designed to support 15lbs/sq.ft. when installed as per ASTM C636.
- Manufacturer shall furnish 0.125" thick closed-cell polyethylene gasket tape to be factory installed on tees and diffusers, fill-in panels and/or light fixtures. Fill-in panels should be held down using factory supplied spring clips to seal against the closed-cell gasket.
- The ceiling suspension system shall have a baked-on powder coat finish to match the laminar flow diffusers and fill-in panels. Paint finish must demonstrate no deterioration when tested in accordance with ASTM D1308 (covered spot & immersion) and ASTM D4752 (MEK double rub) paint durability tests.



## Ceiling Systems

### HDCR-IS - Heavy Duty Welded Grid Ceiling System with Integrated Unistrut®

#### General

- Price HDCR with Integrated Unistrut® is designed to deliver unidirectional laminar flow between structural equipment supports typically found in Catheterization Labs, Interventional Radiology, and Hybrid Operating Rooms. All diffusers, fill-in panels, heavy-duty framing, and ceiling level Unistrut® shall be provided by Price Industries.

#### Products

#### HDCR HEAVY-DUTY CEILING SYSTEM WITH INTEGRATED CEILING LEVEL UNISTRUT®

- Laminar flow diffuser manufacturer shall furnish extruded aluminum ceiling suspension system to support supply diffusers, fill-in or blank-off panels, and light fixtures (by others). Ceiling tees shall have a 1.5" face width and 1.563" overall height. Minimum wall thickness of full tees shall be 0.125 wide with a minimum weight of 0.45lbs. per linear ft. (full tee). All tee and half tee extrusions should include channels along the top side of the stack to support hold-down clips for fill-in panels.
- The ceiling suspension system shall be provided in factory heli-arc welded sub-assemblies not to exceed 5'x 10'. Framed sub-assemblies shall be mechanically fastened in the field with adjacent sub-assemblies being butted together along the half tees with factory supplied bolts or spring steel U-clips. Optional closed-cell polyethylene gasket placed between butted half tees or silicone applied to top of butted half tees is recommended to minimize any potential pathways from interstitial space.
- Welded framing sections shall be factory designed to fit between ceiling level Unistrut® rails as indicated on reflected ceiling plans, structural drawings, and equipment manufacturer's detail plans. Framed sub-assemblies shall incorporate mounting tabs that are factory welded to framing half tees and attach to ceiling level strut, creating a self-leveling ceiling system when installed as per ASTM C636 and manufacturers' guidelines.
- Integrated Ceiling manufacturer shall furnish ceiling level Unistrut® as indicated on structural drawings. Ceiling level Unistrut® shall be factory painted to match rest of components and will be provided in 10' lengths. Strut rails to be field cut by installing contractor to ensure exact fit.
- Integrated Ceiling manufacturer to furnish paint matched 1.5" wide extruded aluminum closure strips for attachment to room-side Unistrut®.
- Unistrut® hardware required for attaching welded HDCR sub-sections to ceiling level strut channels to be provided by Integrated Ceiling manufacturer.
- All tees and half tees shall be pre-punched on 4.85" centers for attachment to minimum 12 gauge pre-stressed suspension wire on 48" centers. Systems shall be designed to support 15lbs/ft<sup>2</sup> when installed per ASTM C636.
- Manufacturer shall provide 0.125" thick, closed-cell polyethylene gasket tape to be field applied to all tees and half tees that support diffusers, fill-in panels, and light fixtures. Fill-in panels to be held down using factory supplied spring clips to ensure a tight seal against the closed cell-cell gasket.

#### FILL-IN PANELS

- As part of the HDCR system, the diffuser manufacturer shall provide fill-in panels to be used where ceiling penetrations and/or access panels are indicated on drawings. Fill-in panels used where ceiling penetrations are present shall be field-cut by installing contractor. Finish of the fill-in panels shall match the appearance of the laminar flow diffusers.

#### EXECUTION

- Install and coordinate system and components per manufacturer's recommended guidelines.

#### INSPECTION

- Integrated Ceiling manufacturer shall provide on-site inspection of space, both above and below the ceiling, ensuring there are no interferences with structural supports or other components that could cause project delays, prior to release of manufacturer's product. Factory personnel shall be involved in all trade coordination meetings as they pertain to integrated ceiling manufacturers' products/systems.
- Per instructions from integrated ceiling manufacturer, the installing contractor shall confirm all trades are prepared for installation of integrated ceiling system and verify that all rough openings in the hard lid are dimensionally correct per approved submittals.

#### INSTALLATION

- Integrated Ceiling manufacturer's factory trained personnel shall be on-site to supervise the installation of the ceiling system. Services to include: identification of products and placement verification per submittal drawings, instructions for proper measuring and field cutting of product where indicated, and instructions for attaching framing sub-sections to ceiling level Unistrut®.
- Suspended ceiling hangers shall be plumb and shall not interfere with other objects within the ceiling space that is not part of the supporting structural or integrated ceiling system. Contractor must confirm in writing that the intended space is ready for installation.

## Ceiling Systems

### HDCR-PL - Heavy Duty Welded Integrated Plenum System

#### General

- Price HDCR-PL is an integrated plenum design incorporating multiple diffusers resulting in a system that requires fewer duct connections. The HDCR-PL is ideal for use in areas that require high capacity air distribution but also accommodates space and cost constraints.

#### Products

#### **HDCR HEAVY-DUTY CEILING SYSTEM WITH INTEGRATED PLENUM**

- Laminar flow diffuser manufacturer shall furnish custom engineered plenum system with integrated extruded aluminum framing to support supply diffusers, blank-off panels, and light fixtures (by others). Plenums shall have a 12" tall low profile design, maximizing ceiling space for additional equipment and minimizing obstructions.
- Integrated plenum provided shall be 14-gauge aluminum construction and have internal Unistrut for support and for suspension from structure above. Inlet collars shall be sized based on airflow required for the intended space.
- Integrated plenum shall incorporate laminar flow diffusers, with or without high efficiency filters, providing non-aspirating, unidirectional airflow above the sterile zone. Diffusers shall incorporate an adjustable damper that is accessible from the room side.
- The perforated distribution plate shall be attached to the diffuser frame using snap-in, non-slip quarter-turn fasteners for easy removal. Two stainless steel retainer cables shall be used to prevent accidental dropping of the diffuser face.
- Diffusers shall be room-side accessible to allow for cleaning of all internal surfaces per ASHRAE Standard 170-2008 and for access to high efficiency filters (if applicable).
- The finish of the Integrated Plenum System shall be B12 baked-on powder coat to match laminar flow diffusers and fill-in panels. Paint finish must demonstrate no deterioration when tested in accordance with ASTM D4752 (MEK double rub) paint durability tests.

#### **FILL-IN PANELS**

- As part of the HDCR system, the diffuser manufacturer shall provide fill-in panels to be used where ceiling penetrations and/or access panels are indicated on drawings. Fill-in panels used where ceiling penetrations are present shall be field-cut by installing contractor. Finish of the fill-in panels shall match the appearance of the laminar flow diffusers.

### **HDCR HEAVY-DUTY WELDED CEILING SYSTEM**

- Ceiling tees shall have be 1.5" wide and be fully welded. Minimum wall thickness of full tees shall be 0.125 wide with a minimum weight of 0.45lbs. per linear ft. (full tee). All tee and half tee extrusions should include channels along the top side of the stack to support hold-down clips for fill-in panels.
- The ceiling suspension system shall be provided in factory heli-arc welded sub-assemblies not to exceed 4'x 8'. Framed sub-assemblies shall be mechanically fastened in the field with adjacent sub-assemblies being butted together along the half tees with factory supplied bolts or spring steel U-clips. Optional closed-cell polyethylene gasket placed between butted half tees or silicone applied to top of butted half tees is recommended to minimize any potential pathways from interstitial space.
- All tees and half tees shall be pre-punched on 4.85" centers for attachment to minimum 12 gauge pre-stressed suspension wire on 48" centers. Systems shall be designed to support 15lbs/ft<sup>2</sup> when installed per ASTM C636.
- Manufacturer shall provide 0.125" thick, closed-cell polyethylene gasket tape to be field applied to all tees and half tees that support diffusers, fill-in panels, and light fixtures. Fill-in panels to be held down using factory supplied spring clips to ensure a tight seal against the closed cell-cell gasket.

#### **EXECUTION**

- Install and coordinate system and components per manufacturer's recommended guidelines and per ASTM C636.

#### **INSPECTION**

- Integrated Ceiling manufacturer shall provide on-site inspection of space, both above and below the ceiling, ensuring there are no interferences with structural supports or other components that could cause project delays, prior to release of manufacturer's product. Factory personnel shall be involved in all trade coordination meetings as they pertain to integrated ceiling manufacturers' products/systems.
- Per instructions from integrated ceiling manufacturer, the installing contractor shall confirm all trades are prepared for installation of integrated ceiling system and verify that all rough openings in the hard lid are dimensionally correct per approved submittals.

#### **INSTALLATION**

- Integrated Ceiling manufacturer's factory trained personnel shall be on-site to supervise the installation of the ceiling system. Services to include: identification of products and placement verification per submittal drawings, instructions for proper measuring and field cutting of product where indicated, and instructions for attaching framing sub-sections to ceiling level Unistrut®.
- Suspended ceiling hangers shall be plumb and shall not interfere with other objects within the ceiling space that is not part of the supporting structural or integrated ceiling system. Contractor must confirm in writing that the intended space is ready for installation

## Ceiling Systems

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### Unitee CR - Ceiling System

- The air diffuser manufacturer shall furnish extruded aluminum ceiling suspension system to support air diffusers, fill-in panels and light fixtures. All extruded aluminum tees shall include integral channels along the stack to support hold down clips for fill-in panels as well as channels on the back of the face for accepting molded, slide-in gasket.
- The ceiling suspension system shall be supplied in pre-cut and pre-punched tee sections. Factory supplied assembly clips shall facilitate tool-free installation of the ceiling system.
- All tees and angles shall be supported using minimum 12 gauge pre-stressed suspending hanger wires on 48" centers. Systems shall be designed to support 10 lbs/sq.ft when installed as per ASTM C636 .
- Manufacturer shall furnish molded gasket to provide a seal between the ceiling system and any diffusers, fill-in panels and/or light fixtures. The molded gasket profile shall match the profile of the channel(s) on the back of the tee face, with adhesive shall not be permitted. Fill-in panels shall be held down using factory supplied spring-steel hold down clips on all sides to ensure seal against the gasket.
- The ceiling suspension system shall have a baked-on powder coat finish to match the laminar flow diffusers and fill-in panels. Paint finish must demonstrate no deterioration when tested in accordance with ASTM D1308 (covered spot & immersion) and ASTM D4752 (MEK double rub) paint durability tests.