Abtech, INC.

SPECIFICATIONS:

HDW Series Modular Hardwall Cleanrooms:
Factory Prefabricated Modular Systems are designed to offer the greatest flexibility possible. Our modular components allow for future expansion and upgrades or relocation of complete system. Installation in most cases can be performed by the End User in a few days.

Wall Construction:
Based on a 3-inch thick panelized wall system supported by a series of Clear Anodized Aluminum extrusions. Wall panels can be ordered in a wide variety of materials and finishes. Standard panel is a double faced Kraft Honeycomb core with 1/8" White Melamine covered Hardboard both sides. Panel sizes are nominal 4-feet wide with heights from 8-feet to 14-feet and higher. Doors and windows are pre-hung for installation ease. Return air cutouts are framed in Aluminum Extrusions. Electrical is concealed inside Wall Post Cavity for Outlets, Light Switches, Conduits, etc.

Ceiling and Roof System:
Heavy Duty Steel Cleanroom T-Grid with a 2 foot by 4 foot pattern supports Filters, Light Fixtures, Cleanroom Tiles, and includes Gasketing material. Cleanroom Grid is supported by Corrugated Steel Deck, Panel Roof or Structural Steel. Aluminum T-Grid and Gel Grid Ceiling Systems are available for special applications.

Filtration Systems:
Designed to meet Federal standard 209E with a variety of air flow designs. Single Pass or Recirculating systems with Unidirectional or Non-Unidirectional air flow patterns are available. Filtration levels from Class 100,000 to Class 1. Standard Units are 2' x 4' Self Powered HEPA Filters, 99.99% @ .3 microns efficiency, with a 1' x 1' x 1" 30% pleated disposable Prefilter. Internal fans have Backward Incline Impellers with Direct Drive Motors, Statically Balanced, and require 115V-4.1A-1Ph-60 HZ power, or optional 115V-1A 1ph 60 hz power.

Environmental Control Packages:
Can be included to control Temperature and Humidity levels based on process requirements. Existing HVAC systems can be incorporated into design in some cases.

Options:
Ante/Gown Rooms, Air Showers, Pass-Thru air lock, ESD walls-ceilings-and-floors, Raised Floors, Vinyl Cleanroom and Tile floors, Single and Double Doors, Windows, Cleanroom tables and other furniture, Amber colored lights and windows, Pressure Gauges, Equipment Platforms, Pre-Fab Steel Floor, Installation, Certification, and Modular Wiring Systems.
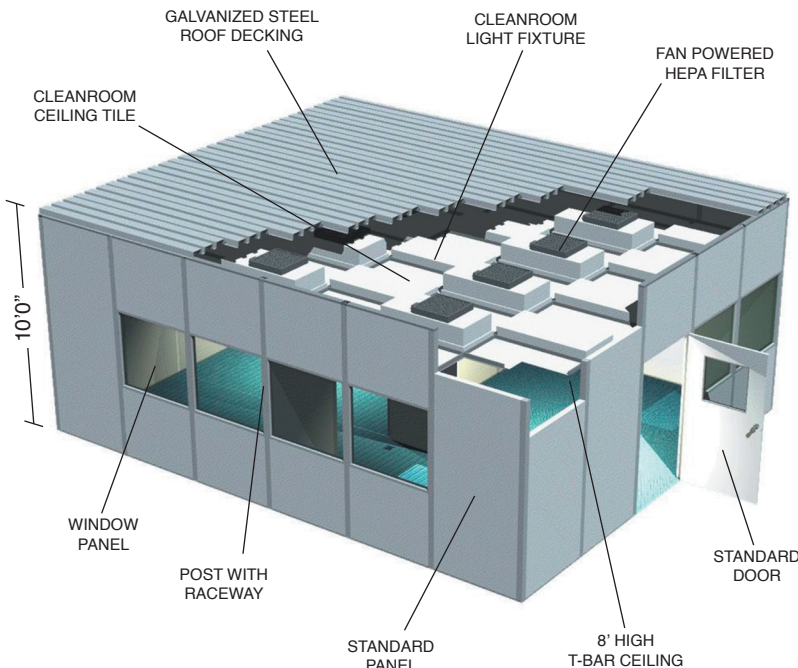
HDW Series Hardwall Cleanrooms are designed to provide a clean, Environmentally Controlled Environment. Clean levels are available from Class 100,000 to Class 1 (ISO Standards Class 1 thru Class 8), with Temperature and/or Humidity control.

The standard system consists of a Panelized Wall Structure that supports the Roof and Ceiling Grid material. Filtered air is provided by Self Powered Filter Units mounted in Ceiling that draw outside air through a Prefilter and deliver filtered air through a Hepa filter into Cleanroom. Filtered air is ex-hausted from Cleanroom through adjustable Exhaust Vents near Floor level. Clean levels will vary depending on quantity and configuration of Filters.

All components are prefabricated and completely Modular in design. Packages can be installed by End User or by our Factory Trained Technicians. Call factory direct for prices on standard or custom sizes.

GALVANIZED STEEL ROOF DECKING · CLEANROOM LIGHT FIXTURE · FAN POWERED HEPA FILTER · CLEANROOM CEILING TILE · WINDOW PANEL · POST WITH RACEWAY · STANDARD PANEL · 8' HIGH T-BAR CEILING · STANDARD DOOR · 10'0"

model#	nominal size	model#	nominal size
HDW-8810	8'6"X8'6"	HDW-121210	12'6"X12'6"
HDW-81010	8'6"X10'6"	HDW-121410	12'6"X14'6"
HDW-81210	8'6"X12'6"	HDW-121610	12'6"X16'6"
HDW-101010	10'6"X10'6"	HDW-121810	12'6"X18'6"
HDW-101210	10'6"X12'6"	HDW-122010	12'6"X20'6"
HDW-101410	10'6"X14'6"	HDW-161610	16'6"X16'6"
HDW-101610	10'6"X16'6"	HDW-161810	16'6"X18'6"
HDW-101810	10'6"X18'6"	HDW-162010	16'6"X20'6"
HDW-102010	10'6"X20'6"	HDW-202010	20'6"X20'6"

Specify Class: (A)=100,000 (iso 8) (B)=10,000 (iso 7) (C)=1,000 (iso 6) (D)=100 (iso 5) (E)=10 (iso 4)
example: for a HDW-888 Class 10 add "E" to model# (HDW-888-E)

Specifications are subject to change without notice.
See Cleanroom Particulates Table for Reference to ISO Standards.

Panels are nominal 3-inch thick with standard sizes from four feet wide by eight feet tall to four feet wide to ten feet tall. Custom heights over ten feet tall are also available. Panel construction varies over a wide range.

Standard panels are Melamine laminated 1/8" Tempered Hardboard both sides of Kraft Honeycomb core.

Fire and Sound Rated Panels are Vinyl laminated 1/2" Gypsum both sides of expanded Polystyrene Foam core.

High Pressure Laminate Panels have vertical grade, Plastic laminated Hardboard, laminated to both sides of Kraft Honeycomb or Expanded Polystyrene Foam core. Static dissipative Formica is also available.

Metal Wall Panels will have either 26 ga. prepainted Steel or .019 prepainted Aluminum skins laminated to 1/8" Tempered Hardboard both sides of Kraft Honeycomb or Expanded Polystyrene Form core.

FRP Panels are smooth faced .060 White Fiberglass Reinforced Plastic laminated to 1/8" Tempered Hardboard with Kraft Honeycomb or Expanded Polystyrene core. Many more custom panel configurations are available.

Posts:

Posts are to be of four-piece design to form a non-progressive wall system. Cavity of posts will allow use of approved steel electrical boxes that are now required by building codes. Posts shall also act as raceways for Phone Lines, Data Lines, and other electrical lines. Structural design loading on Posts allows up to 4,500 vertical pounds or an additional Structural Steel Cavity insert can be installed for loads up to 12,500 pounds. The structural elements of the posts shall be connected by Machine Bolts and Nuts no more than 18" center line. All Extrusions shall be 6063-T5 aluminum, minimum .062 thickness, with a Clear Anodized finish.

Corner Posts:

Corner posts will be of single piece construction and support loads of up to 4,500 vertical pounds. Structural steel cavity inserts can be added for loads up to 12,000 pounds. Material will be 6063-T5 aluminum, minimum .062 thickness, and Clear Anodized finish.

Base Channel:

Base Channel provides support for wall panels and posts while allowing space for anchors or post uplift connectors. Its low-profile design is aesthetically pleasing and eliminates the need for additional base molding. Material shall be of 6063-T5 aluminum, minimum .062 thick, and Clear Anodized finish.

Capping Channel:

Capping Channel acts as a support for vertical deck loads in addition to serving as a continuous diaphragm member. Material is 6063-T5 aluminum, minimum .062 thickness, and Clear Anodized finish.

Windows:

Standard fixed windows are 44" wide by 40" tall with 3/16" tempered safety glass installed in aluminum frame. Window units are completely modular. Horizontal sliding and pass thru windows can also be provided. Frames are 6063-T5 aluminum, .062 minimum thickness, with Clear Anodized finish. Full view glass panels are available as an option.

Doors:

Doors will be 1 3/4" thick and standard 42" wide by 80" tall to accommodate equipment or furniture. Door material will match wall panels and be framed in an aluminum channel for heavy traffic areas. Door Jamb is a very heavy extrusion designed to eliminate weak door panel frames. All doors are factory prehung with hinges and door lockset. Windows with 3/16" tempered safety glass are optional. Extrusions are 6063-T5 aluminum, minimum .062 thickness, with Clear Anodized Finish.

Ceiling System:

Ceiling system is Heavy Duty White Steel T-Bar Grid. Ceiling Tiles are 1/2" Vinyl Laminated Gypsum with sealed edges. Gasketing is provided for a complete seal of ceiling system. Grid is arranged in a 2'x4' pattern to accept standard filters and light fixtures. Optional ceiling systems also available are 1 1/2" or 2" Anodized Aluminum T-Bar and Gel Grid, Powder Coated Perforated Steel Tile, FRP Tile, and Powder Coated Aluminum Tile.

Roof System:

Galvanized Steel Roof Decking acts as the building diaphragm in addition to supporting the Ceiling system. HVAC Equipment can be mounted on roof with optional Structural Steel Equipment Platform. Structural panel roof systems are also optional.

Filtration System:

2'x4' HEPA Filters that are Fan powered or ducted Central Blower package. Standard final HEPA filters are 99.99% efficient @ .3 microns. ULPA grade 99.9995% efficient @ .12 microns are optional. Disposable Pre-Filters mounted in lower portion of wall panel are 30% pleated type.

Lighting:

2'x4'-4 Tube Recessed Cleanroom Sealed fixture with a Plastic Prismatic Lens to enhance Light Diffusion. Fixtures require 1.3A @ 115V power and provide nominal 100 Foot Candles in Cleanroom Space. Electronic Ballasts, 277V systems, and teardrop fixtures are optional.

Electrical:

Posts are pre-wired with 120v Duplex Outlets and Switches and mounted in a Steel Electrical Box. Fluorescent gasketed light fixtures are 2'x4', 4 TUBE, 120V, less tubes with energy saving or Electronic Ballasts. All components are U.L. approved and conform to the National Electric Code (N.E.C.). Options-Class 1 Division 1 Hazardous Environment components, 208/240V 3 PH 480V 3 PH voltages, Electromagnetic Interlocks, Automatic Programmable Door Closures.

Environmental Control Packages:

Air Handlers can control temperature and/or humidity levels. Units can be package or Split System with DX or Chilled Water Coils. Control systems are available with fully Programmable Microprocessor Control/Display with Remote Sensors. Factory Trained Technicians will provide equipment design assistance.

Floor:

Optional 12" x 12" x 1/8" vinyl tile, vinyl sheet flooring, antistat or ESD Cleanroom vinyl sheet; with optional welded seams, raised flooring, and epoxy painted floor coating.

Installation:

Factory trained crews will provide a Turnkey project or a material only package is available. All projects include CAD drawings and instructions.

Specifications are subject to change without notice.

Abtech, INC.

SFW Series Softwall Cleanrooms are designed to provide clean environments from Class 100,000 to Class 10 (ISO Standards Class 3 thru Class 8).

This system consists of a Tubular Steel Frame Structure that supports the Ceiling Grid and Clear Vinyl Curtain Wall material. Filtered air is provided by Self Powered Filter Units mounted in-Ceiling that draw outside air thru a Prefilter and deliver filtered air through a Hepa filter into Cleanroom. Filtered air is exhausted from Cleanroom beneath the Curtain at Floor level. Clean levels will vary depending on quantity and configuration of Filters.

All components are prefabricated and completely Modular in design and can be installed by End User or by our Factory Trained Technicians. Call factory direct for prices on standard or custom sizes.
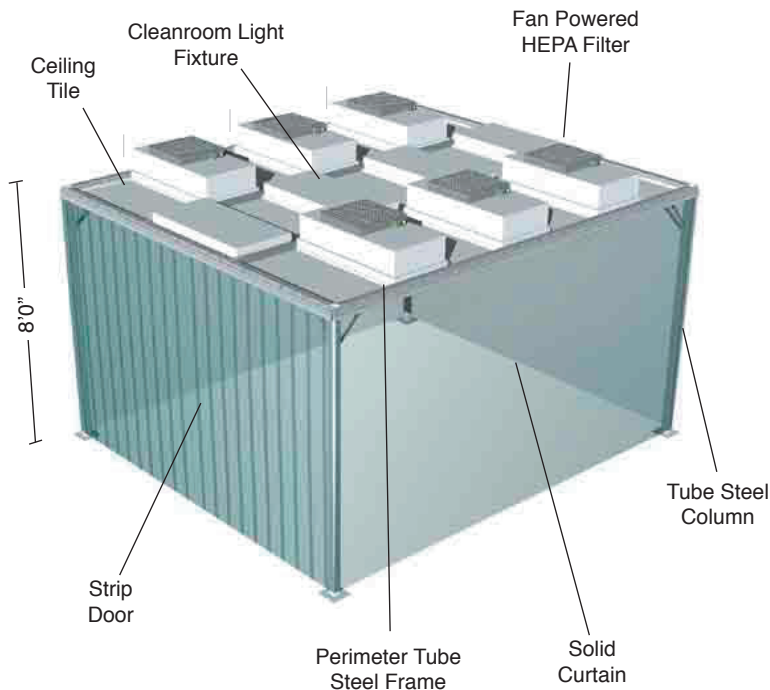
SPECIFICATIONS:

FRAME:
Columns and Perimeter framing is 3"x3"x1/4" Square Steel Tubing with White Powder Coat finish. Corner Bracings are 1"x1"x1/8" Square Steel Tube.

CEILING:
Rectangle Steel Tube Main Tee's on 4 foot center line with Aluminum Cross Tee's on 2 foot center line support 1/2" thick Vinyl Coated Gypsum Cleanroom Tiles, Light Fixtures and Filters. Aluminum wall angle forms perimeter Closure. Foam Gasket material is provided to seal Grid system.

WALLS:
4 foot wide x 7 foot 6 inches high, .040 thick, Clear PVC Curtain surround perimeter. A 3 foot wide Doorway with 8 inch wide overlapping strips is standard. All Curtains are mounted to Ceiling Frame with an Aluminum Framing System.

FILTRATION:
2 foot x 4 foot Self Powered Hepa Filters, 99.99% @.3 microns efficiency, with a 1'x1'x1", 30% pleated disposable Prefilter. Standard Speed Control and 6 foot Power Cord are factory mounted. Blowers have Backward Incline Impellers with direct drive Motors, are Statically Balanced, and require 115V-4.1A-1PH-60HZ power, or optional 115V-1A-1PH-60HZ Power.

OPTIONS:
Antistatic and Low Outgassing Curtain, Rigid Acrylic or Polycarbonate wall, Locking Swivel Casters, Manometer Filter Pressure Gage, 230V Blowers, 277V Lighting, Flow Thru lights, Ulpa Filters (.12 microns), Stainless Steel frame, Ionization package, Spot Cooling A/C system.

Ceiling Tile

Cleanroom Light Fixture

Fan Powered HEPA Filter

8'0"

Strip Door

Perimeter Tube Steel Frame

Solid Curtain

Tube Steel Column

model#	nominal size	model#	nominal size
SFW-888	8'6"X8'7"	SFW-12128	12'6"X12'8"
SFW-8108	8'6"X10'9"	SFW-12148	12'6"X14'9"
SFW-8128	8'6"X12'8"	SFW-12168	12'6"X16'9
SFW-10108	10'6"X10'9"	SFW-12188	12'6X18'10"
SFW-10128	10'6"X12'8"	SFW-12208	12'6X20'10"
SFW-10148	10'6"X14'9"	SFW-16168	16'6"X16'9"
SFW-10168	10'6"X16'9"	SFW-16188	16'6"X18'10"
SFW-10188	10'6"X18'10"	SFW-16208	16'6"X20'10"
SFW-10208	10'6"X20'10"	SFW-20208	20'6"X20'10"

Specify Class:

(A)=100,000 (iso 8) **(B)=10,000 (iso 7)**

(C)=1,000 (iso 6) **(D)=100 (iso 5)** **(E)=10 (iso 4)**

example: for a SFW-888 Class 10 add "E" to model#   (SFW-888-E)

Specifications are subject to change without notice. See Cleanroom Particulates Table for Reference to ISO Standards.

General

_____Federal Specification 209E establishes alternate classifications of cleanliness as well as the four standard classifications 100, 1,000, 10,000, and 100,000 from 209C. Additionally these levels are addressed in metric "SI" and English. Listed below is a table summary from Federal Standard 209E, September 11, 1992.

Federal Standard 209E

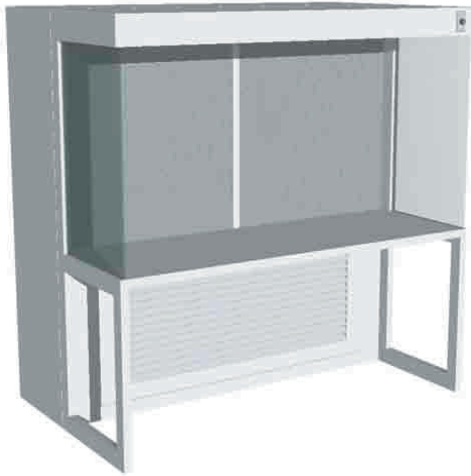| Class Name	Class Limits (not to exceed)									
	0.1 μm		0.2 μm		0.3 μm		0.4 μm		0.5 μm	
	Volume Units		Volume Units		Volume Units		Volume Units		Volume Units	
	(m³)	(ft³)	(m³)	(ft³)	(m³)	(ft³)	(m³)	(ft³)	(m³)	(ft³)
M 1	350	9.91	75.7	2.14	30.9	0.875	10	0.283		
M 1.5 (1)	1,240	35	265	7.5	106	3	35.3	1		
M 2	3,500	99.1	757	21.4	309	8.75	100	2.83		
M 2.5 (10)	12,400	350	2,650	75	1,060	30	353	10		
M 3	35,000	991	7,570	214	3,090	87.5	1,000	28.3		
M 3.5 (100)			26,500	750	10,600	300	3,530	100		
M 4			75,700	2,140	30,900	875	10,000	283		
M 4.5 (1,000)							35,300	1,000	247	7
M 5							100,000	2,830	618	17.5
M 5.5 (10,000)							353,000	10,000	2,470	70
M 6							1,000,000	28,300	6180	175
M 6.5 (100,000)							3,530,000	100,000	24,700	700
M 7							10,000,000	283,000	61,800	1750

Example:

Class M 2.5 (@ 0.3 μm & 0.5 μm) describes air with not more than 1060 particulates/m³ of a size 0.3 μm and larger, nor more than 353 particulates/m³ of a size 0.5 μm and larger.

Class 100 @ 0.5 μm describes air not more than 100 particles/ft³ of a size 0.5 μm and larger.
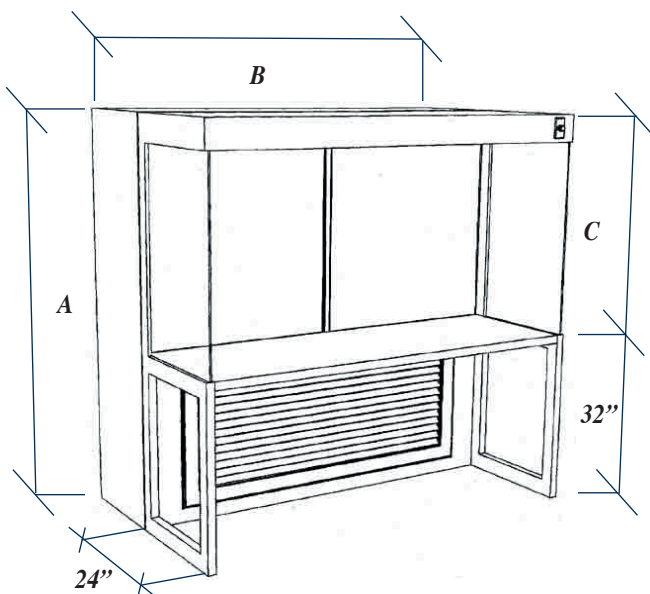
Note:

For Reference Purposes please note that The Federal Standard 209E has been replaced by the ISO 14644 Standards. The ISO Cleanroom Classes are similiar to The Federal Standard 209E Classes.

CONSTRUCTION:

Frame: 16 gauge Cold Rolled Steel with Gloss White painted Enamel finish.

Cabinet: White HPL laminated High Density Particleboard.

Side Panels: Removable clear Acrylic Plastic.

Work Surface: White High Pressure Laminate.

Blower and Motor: Energy efficient and engineered for acoustics Rated at twice the initial static-pressure to maintain the required 100 feet per minute. Includes Speed Control switch.

Prefilters: 30% efficiency, one inch thick, Pleated type, with access from front of unit.

Final filters: Hepa type 99.99% efficiency on all particles 0.3 Microns and larger in Aluminum frames with access from back.

Lighting: Fluorescent with minimum 125 F.C. at surface.

Electrical: Standard 115 volts. [230v and 460v 3PH available]

Options: Antistatic materials, Stainless Steel work surface, Magnahelic gauges, .12 Micron ULPA Filters, Isolated work surface.

APPLICATIONS:

Horizontal Laminar Flow Benches can be used for many different applications that require a controlled, clean environment at the benchtop level. These Benches are free standing and self contained with optional isolated table work surface. Benches can be used in situations where it is not feasible or cost effective to build a cleanroom. In many cases, it would be advantageous to use clean benches to establish class 100 clean zones rather than build or upgrade a cleanroom.

Specifications are subject to change without notice.

Model Number	Dimensions A	B	C	Approx. wt. lbs.
HZL-5024	61"	50"	23"	475
HZL-5030	67"	50"	29"	500
HZL-5036	73"	50"	36"	575
HZL-5048	85"	50"	47"	800
HZL-6024	61"	74"	23"	575
HZL-6030	67"	74"	29"	725
HZL-6036	73"	74"	36"	875
HZL-6048	85"	74"	47"	1075
HZL-8024	61"	98"	23"	775
HZL-8030	67"	98"	29"	975
HZL-8036	73"	98"	36"	1175
HZL-8048	85"	98"	47"	1350
[custom sizes available on request]				

CONSTRUCTION:

Frame: 16 gauge Cold Rolled Steel with Gloss White painted Enamel finish.

Cabinet: White HPL laminated High Density Particleboard.

Side Panels: Removable clear Acrylic Plastic.

Work Surface: White High Pressure Laminate.

Blower and Motor: Energy efficient and engineered for acoustics Rated at twice the initial static-pressure to maintain the required 100 feet per minute. Includes Speed Control switch.

Prefilters: 30% efficiency, one inch thick, Pleated type, with access from top of unit.

Final filters: Hepa type 99.99% efficiency on all particles 0.3 Microns and larger in Aluminum frames with access from back.

Lighting: Fluorescent with minimum 125 F.C. at surface.

Electrical: Standard 115 volts. [230v and 460v 3ph available]

Options: Antistatic materials, Stainless Steel work surface, Magnahelic gauges, .12 Micron ULPA Filters, Isolated work surface.

Specifications are subject to change without notice.

APPLICATIONS:

Vertical Laminar Flow Benches can be used for many different applications that require a controlled, clean environment at the bench top level. These Benches are free standing and self contained with optional isolated table work surface. Benches can be used in situations where it is not feasible or cost effective to build a cleanroom. In many cases, it would be advantageous to use Clean Benches to establish class 100 clean zones rather than build or upgrade a cleanroom.

Model Number	Dimensions			Approx. wt. lbs.
	A	B	C	
VZL-5024	61"	28"	61"	475
VZL-5030	61"	34"	61"	500
VZL-5036	61"	40"	61"	575
VZL-5048	61"	54"	61"	800
VZL-6024	73"	28"	65"	575
VZL-6030	73"	34"	65"	725
VZL-8030	85"	34"	72"	975
VZL-8036	85"	40"	72"	1175
VZL-8048	85"	54"	72"	1350

[custom sizes available on request]

Abtech Cleanroom Air Showers are prefabricated enclosures to be used for removing surface particles from personnel prior to entering a Cleanroom work area.

The air shower is a high velocity, low pressure type system, providing a normal entrance to and exit from a contamination controlled area. While the workmanship and materials are of a professional quality, the air showers are ultimately engineered to incorporate an aesthetically pleasing design to fit the general atmosphere of the cleanroom specifications. All Abtech Air Showers are assembled and tested directly in the factory for quality control purposes, and then subsequently disassembled for shipping and field assembly.

Each assembled Air Shower is a completely self contained unit, equipped with air filtration systems, blowers, motors, controls, a solid-state programmable microprocessor, interlocking doors, lighting, and a pre-wired electrical panel.

Although we offer a wide and varied array of standard Air Shower design packages, we can also customize these units to meet your special needs. Contact us with your requirements and we will demonstrate our proficiency by designing an Air Shower that will work the way you need it to.

Typical configurations include, but are not limited to, straight thru patterns, right turn patterns, left turn patterns, U-shaped patterns and T-shaped patterns.

All units are carefully packaged for transportation, and are shipped by recognized carriers at the lowest applicable rate.

Abtech Air Shower

The Construction of our Air Showers are conducted to ensure that all exterior and interior surfaces are completely sealed with materials compatible with class 1/10 Cleanroom construction standards. All visible surfaces are covered with high-pressure, white plastic laminate. Trim is constructed of clear, anodized aluminum. All interior duct surfaces are completely covered with plastic laminate, melamine laminate, clear anodized aluminum, or other suitable surface coverings compatible with class 1/10 Cleanroom construction standards. Doors are also made from clean, anodized aluminum and 1/4" tempered glass used at the entry and exit of the Air Shower. Heavy duty commercial door closers, door seals, and door sweeps are used to maintain the seal of the Cleanroom envelope. Adjustable air nozzles are constructed from white plastic. They are sized and spaced to provide on average 7,000 fpm air flow at the face of the nozzle. Return air registers are of white baked enamel steel grilles, built into the Air Shower wall system. Interior ceilings include an appropriate number of air nozzles and a fluorescent light, or, HEPA filters and lighting above a protective grille (on models with laminar flow ceilings). Also provided are predrilled and capped sprinkler penetrations.

The Filtration System is comprised of HEPA filters capable of removing 99.99% of dust particles to 0.3 microns in size. Filter access is from above unit, or as specified. Air Showers which are specified to include optional Constant Purge ceilings have fan powered HEPA filters mounted above a polystyrene eggcrate diffuser panel. The Constant Purge feature will add 6" to the standard Air Shower height. Replaceable pre-filters of 30% efficiency are used to maximize life of the absolute filters, and are accessible from the Air Shower interior, within return air grille(s).

The Air Shower Electrical System is comprised of a pre-wired electrical panel which contains the major electrical components, such as: rotary disconnect switch, transformers, fuses, motor starter, overload, terminal strips, ground bus, and programmable logic controller. Further included is a single-point connection of 208/220 volt/3 wire service or 460 volt/3 wire service which serves as the only source of power required by the buyer, as well as a paddle-wheel type high pressure blower, sized to provide 7,000 fpm velocity at the face of the air nozzles. A rotation indicator is permanently attached to the blower housing. All lighting is 115 volts, and all wiring methods comply with the National Electrical Code.

For the Control System, a Programmable Logic Controller (PLC) is used to control the sequence of operation of the Air Shower. An Emergency Off Button (EMO) located inside the Air Shower is mounted in a conspicuous location. Activating the switch causes the cycle to immediately end, and release all interlocks. Lighting is set to remain on. Door sensors are set at 24 volt DC magnetic reed switches, and door interlocks are 24 volt, located in the door jamb at the top of the entrance and exit ways. All locks are automatically set to release upon loss of power, or when the Emergency Off Button is pressed.

All our Air Showers are Inspected prior to shipping by factory quality assurance personnel. Units are set up square and plumb on a level surface in the factory test area, and any necessary adjustments to doors and door seals will be made to project satisfaction. Sound levels, velocity, vibration, cleanliness, trueness to size, and integrity of design are checked prior to disassembly and crating. After disassembly for shipment, all components are marked clearly for field installation. A floor plan, assembly instructions, and an electrical schematic are provided for each Air Shower. As always, our professional technical assistance is only a phone call away, before or after completion of any project.
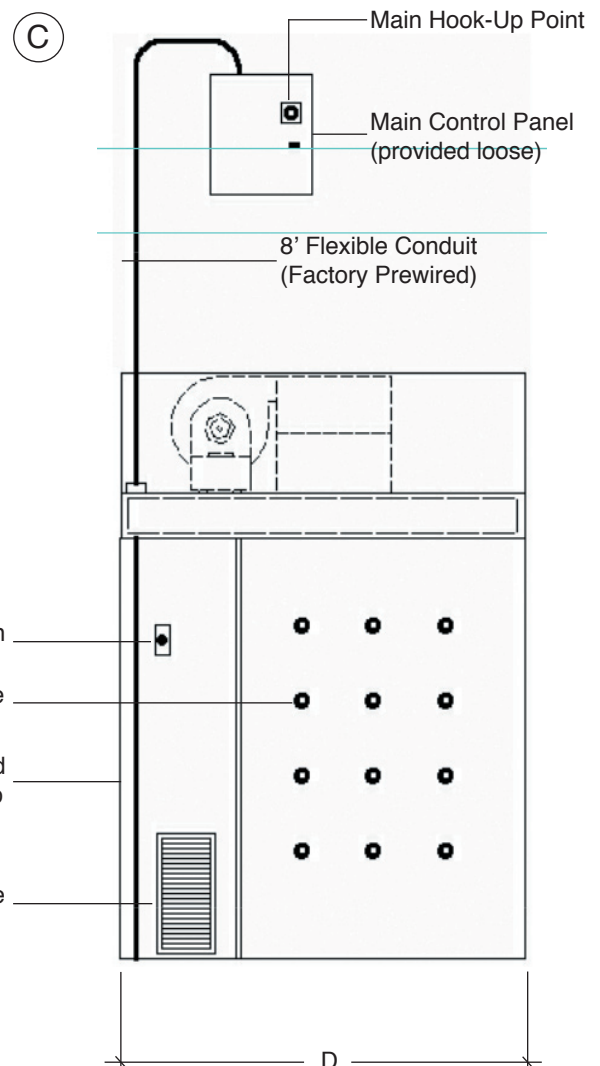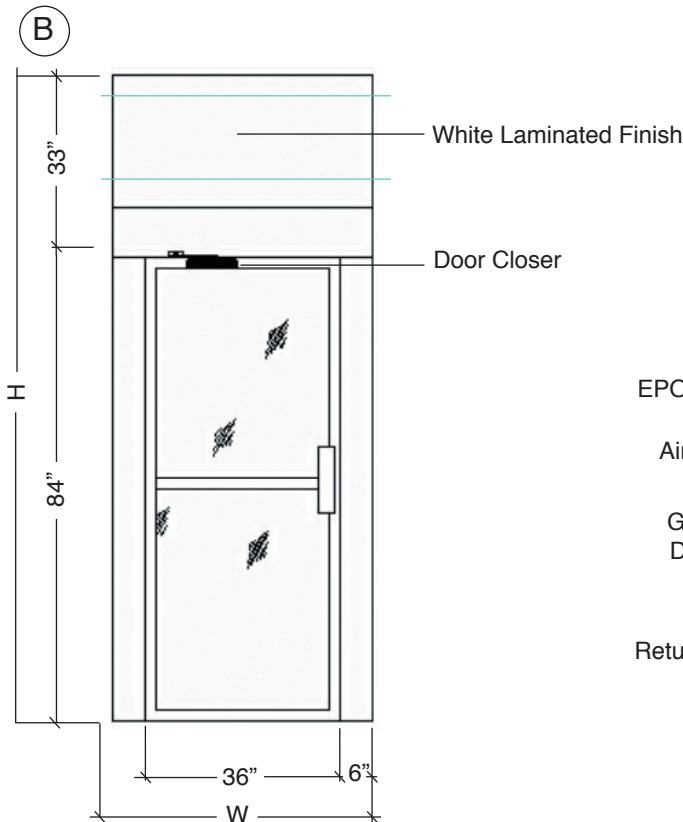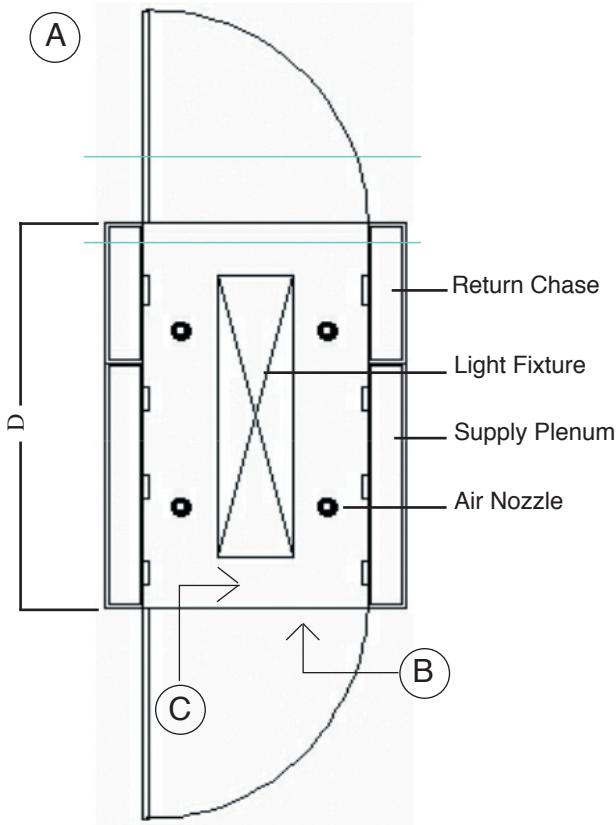
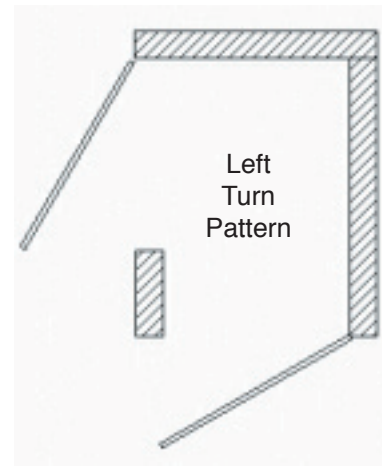Specifications are subject to change without notice.
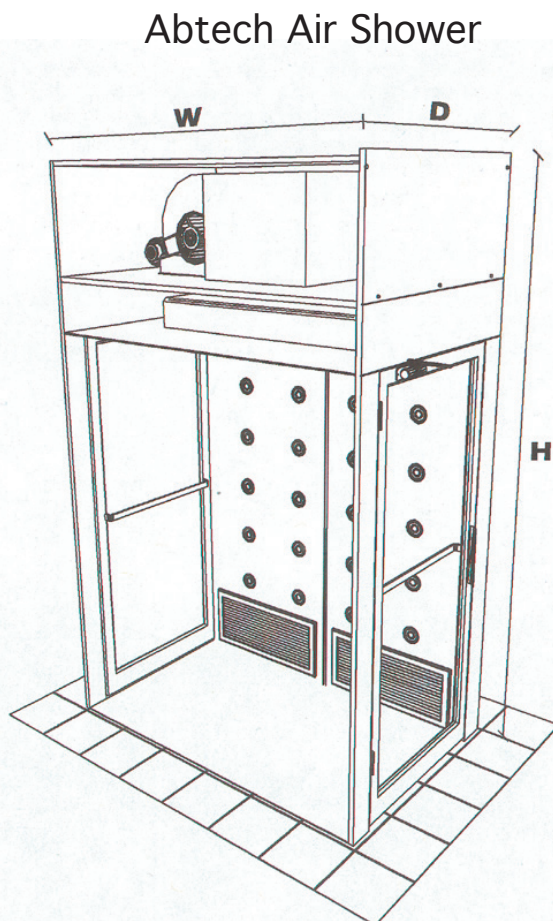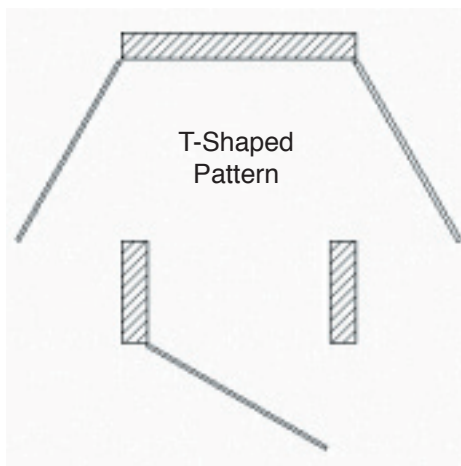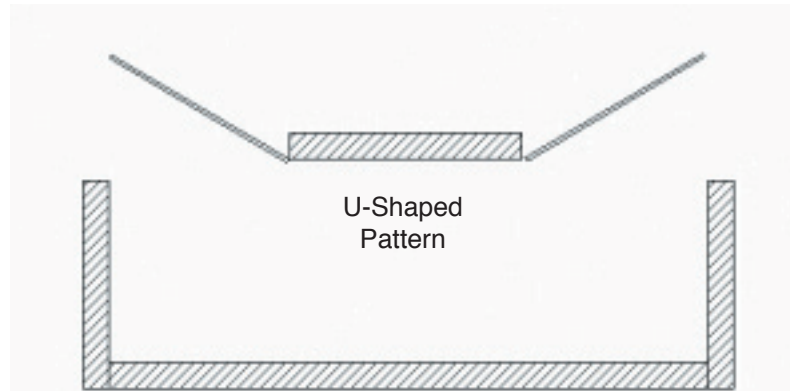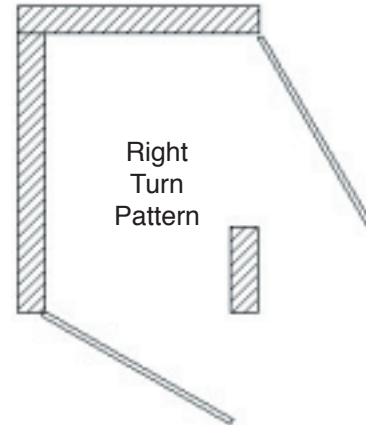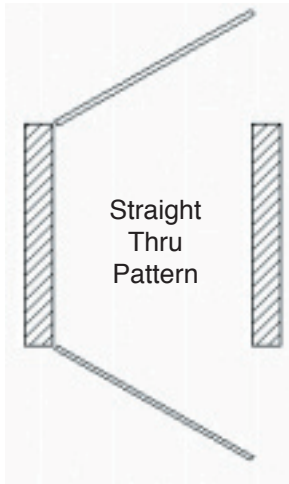
Air Shower Ordering Table

Size	Model #	Exterior Dimensions (W) (D) (H)			Interior Dimensions (W) (D) (H)			Fan Size	Fan Qty	Total CFM	Air Jets (Qty)	Air Jets (FPM)	Amps F.L.A. (230V)	Amps F.L.A. (460V)	Shipping Weight (Lbs.)
	AAS4848e	48"	48"	118"	36"	44"	84"	2 HP	1	750	20	6,000	8A	4A	1,000
4' x 4'	AAS4848s	48"	48"	118"	36"	44"	84"	3 HP	1	875	24	8,000	8.5A		1,050
	AAS4848v	48"	48"	124"	36"	44"	84"	3 HP	1	875	20	8,000	9A		1,100
	AAS4860e	48"	60"	118"	36"	56"	84"	3 HP	1	800	24	6,000	8.5A		1,200
4' x 5'	AAS4860s	48"	60"	118"	36"	56"	84"	5 HP	1	1,500	44	8,000	14A		1,300
	AAS4860v	48"	60"	124"	36"	56"	84"	5 HP	1	1,500	40	8,000	15A		1,350
	AAS6060e	60"	60"	118"	48"	56"	84"	3 HP	1	800	24	6,000	8.5A		1,500
5' x 5'	AAS6060s	60"	60"	118"	48"	56"	84"	5 HP	1	1,500	44	8,000	14A		1,600
	AAS6060v	60"	60"	124"	48"	56"	84"	5 HP	1	1,500	40	8,000	15A		1,650
	AAS4872e	48"	72"	118"	36"	68"	84"	3 HP	1	800	24	6,000	8.5A		1,500
4' x 6'	AAS4872s	48"	72"	118"	36"	68"	84"	5 HP	1	1,500	44	8,000	14A		1,600
	AAS4872v	48"	72"	124"	36"	68"	84"	5 HP	1	1,500	40	8,000	15A		1,650
	AAS6072e	60"	72"	118"	48"	68"	84"	3 HP	1	800	24	6,000	8.5A		1,600
5' x 6'	AAS6072s	60"	72"	118"	48"	68"	84"	5 HP	1	1,500	44	8,000	14A		1,700
	AAS6072v	60"	72"	124"	48"	68"	84"	5 HP	1	1,500	40	8,000	15A		1,750
	AAS7272e	72"	72"	118"	60"	68"	84"	3 HP	1	800	24	6,000	8.5A		1,700
6' x 6'	AAS7272s	72"	72"	118"	60"	68"	84"	5 HP	1	1,600	44	8,000	14A		1,800
	AAS7272v	72"	72"	124"	60"	68"	84"	5 HP	1	1,600	40	8,000	15A		1,850
	AAS4896e	48"	96"	118"	36"	92"	84"	3 HP	1	800	24	6,000	8A		1,900
4' x 8'	AAS4896s	48"	96"	118"	36"	92"	84"	3 HP	1	3,000	68	8,000	18A		2,250
	AAS4896v	48"	96"	124"	36"	92"	84"	3 HP	1	3,000	60	8,000	20A		2,350
	AAS48120e	48"	120"	118"	36"	116"	84"	3 HP	1	800	24	6,000	8A		2,000
4' x 10'	AAS48120s	48"	120"	118"	36"	116"	84"	5 HP	1	3,000	88	8,000	28A		2,350
	AAS48120v	48"	120"	124"	36"	116"	84"	5 HP	1	3,000	80	8,000	30A		2,450
	AAS48144e	48"	144"	118"	36"	140"	84"	3 HP	1	1,,600	48	6,000	16A		2,500
4' x 12'	AAS48144s	48"	144"	118"	36"	140"	84"	5 HP	1	3,000	80	8,000	28A		2,850
	AAS48144v	48"	144"	124"	36"	140"	84"	5 HP	1	3,000	72	8,000	30A		2,950
	AAS48180e	48"	180"	118"	36"	176"	84"	3 HP	1	1,600	48	6,000	16A		2,900
4' x 15'	AAS48180s	48"	180"	118"	36"	176"	84"	5 HP	1	4,500	132	8,000	42A		3,450
	AAS48180v	48"	180"	124"	36"	176"	84"	5 HP	1	4,500	120	8,000	45A		3,600
	AAS48240e	48"	240"	118"	36"	236"	84"	3 HP	1	1,600	96	6,000	32A		4,000
4' x 20'	AAS48240s	48"	240"	118"	36"	236"	84"	5 HP	1	4,500	176	8,000	56A		4,700
	AAS48240v	48"	240"	124"	36"	236"	84"	5 HP	1	4,500	160	8,000	60A		4,900

Typical Air Shower Drawing

- (A) Plan View

- (B) Elevation 1

- (C) Elevation 2

Plan View (A) labels:
- Return Chase
- Light Fixture
- Supply Plenum
- Air Nozzle

Elevation 1 (B) labels:
- White Laminated Finish
- Door Closer
- 33"
- H
- 84"
- 36"
- 6"
- W

Elevation 2 (C) labels:
- Main Hook-Up Point
- Main Control Panel (provided loose)
- 8' Flexible Conduit (Factory Prewired)
- EPO Station
- Air Nozzle
- Gasketed Doorstop
- Return Grille
- D

Typical Configurations

Straight
Thru
Pattern

Right
Turn
Pattern

U-Shaped
Pattern

T-Shaped
Pattern

Left
Turn
Pattern

ABTECH STANDARD
PASS THRUS:

SHOWN WITH CLEAR
ACRYLIC DOOR,
ALUMINUM HANDLES,
PIANO HINGES,
MANUAL INTERLOCK,
AND TENSION CATCHES

PASS THRU OPTIONS:

- Stainless steel inner liner with white laminate outside surfaces
- All stainless steel construction
- All steel construction with white powdercoat finish
- Mounting Frame, white painted
- Mounting Frame, stainless steel
- Support Gussets
- Double Doors
- Internal Shelving
- HEPA Filtered

Abtech Pass Thru Cabinets help control contaminants entering the Cleanroom during pickup and delivery of product or supplies. Delivery personnel and contaminants remain outside the Cleanroom; yield and productivity is thereby increased because personnel remain clean and on the job. Pass Thru Cabinets are available in white laminate construction as well as cold-rolled steel, stainless steel, polypropylene and other materials. Standard units feature interlocking acrylic doors with smoke seal gasket to protect your Cleanroom envelope. All inside and outside surfaces are featured with 3/4" high density particle board core for widths up to 28". All lengths over 30" are 1" core.

Doors are 1/2" clear acrylic with aluminum handles, full length piano hinge, manual interlock, tension catch and are gasketed for positive seal. Doors provide easy access and complete visibility.
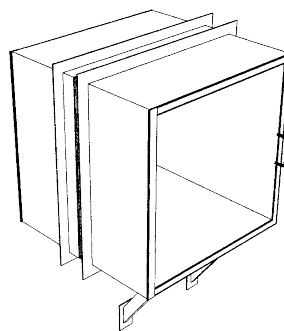
NOTE: When ordering Pass Thrus, add approximately 4" to the depth dimension to include doors and handles. Hole rough cut in wall should be 1/8"-1/4" larger than O.D. of the Pass Thru. All Pass Thru Cabinets are shipped in a wooden crate.

Standard White Laminate on all inside and outside surfaces

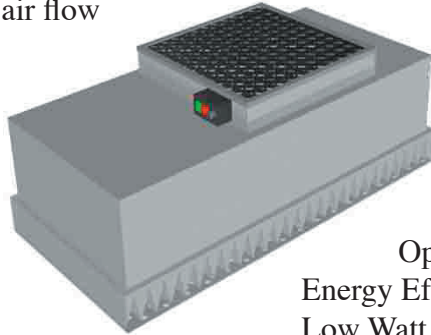| Model #	Exterior Dimensions H W D	Model #	Exterior Dimensions H W D
	12" x 12" x 12"	APT1212SS	12" x 12" x 12"
	12" x 18" x 12"	APT1412SS	12" x 14" x 12"
	18" x 20" x 18"	APT1612SS	12" x 16" x 12"
	12" x 16" x 12"	APT1812SS	12" x 18" x 12"
	18" x 18" x 18"	APT1818SS	18" x 18" x 18"
	12" x 14" x 12"	APT2018SS	18" x 20" x 18"
	24" x 28" x 24"	APT2418SS	18" x 24" x 18"
	24" x 24" x 24"	APT2818SS	18" x 28" x 18"
	18" x 24" x 18"	APT2424SS	24" x 24" x 24"
	18" x 28" x 18"	APT2824SS	24" x 28" x 24"
	24" x 30" x 24"	APT3024SS	24" x 30" x 24"
	24" x 36" x 24"	APT3624SS	24" x 36" x 24"

Shown with optional
mounting trim

Shown with brackets for
offset mount
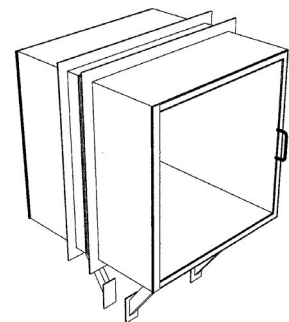
Shown with brackets
for center mount

Low sound level at desired air flow

Optional Energy Efficient Low Watt Motor

Housing: White powdercoated, fabricated from 20 gauge steel, joined and positively sealed with a gasket to HEPA filter.

Filter: Size 23 5/8" x 47 5/8" x 3" with exposed anodized aluminum frame, is rated at a .54 efficiency standard of 99.99% at .3 micron. The filter is designed for 90 FPM average face velocity @ 0.47 w.g.

Grille: Painted white epoxy with a diamond pattern.

Overall size: 23 5/8" x 47 5/8" x 12 5/8"

Weight: 73 Lbs.

Order Information:

Complete Module:

# FH2448A	115V, 60 hz, 4.1 Amp
# FH2448B	115V, 60 hz, .92 Amp
# FH2448C	208-230V, 60 hz, 2.1 Amp (208V), 2.0 Amp (230V)
# FH2448D	277V, 60 hz, 1.7 Amp

The Abtech Fan/Filter Module is designed to fit a standard 2' x 4' ceiling opening.

At 90 FPM, the typical noise level is 50 dba.

Supply air passes through a 20" x 20" x 1" pleated type pre-filter rated at 30% ASHRAE efficiency.

The blower is a direct drive, forward curve blower. The standard motor is a 1/3 hp, 115V, 60 hz, single phase, permanent split capacitor with thermal overload protection. Other voltages are available.

Each module is equipped with a solid state variable speed control with RFI suppression and a fused on/off switch installed in a 2" x 4" junction box mounted to the prefilter frame. The module is then ready for the "end-user" to provide electrical hook-up.

A one piece plenum is fabricated from 20 gauge steel with a white powdercoated finish. Four (4) seismic clips are provided at all top corners.

Final filtration is a standard HEPA filter, 99.99% efficiency @ .3 micron or larger. A white epoxy grille with a diamond pattern protects the filter. HEPA filters are scan tested at the factory, leak thresholds according to IES-RP-CC001.3.

Replacement Filters:

# RH2448	Replacement HEPA Filter @ 99.99% efficiency
# RU2448	Replacement ULPA Filter @ 99.9995% efficiency
# RP2020	Prefilter

Replacement Parts:

# RF110	110V Fuse, 6 1/4 Amp
# RFS110	110V Fuse Protection w/switch
# RS208	208/230V Switch, 2-pole
# RS277	277V Switch, 1-pole
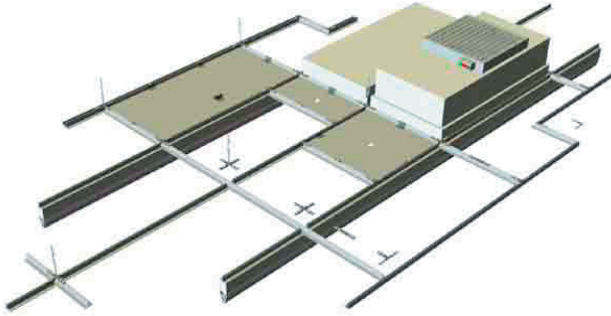
2" Aluminum Cleanroom T-Grid System

The Abtech 2" Sealed T-Grid System is a heavy duty extruded aluminum grid system, manufactured to provide maximum corrosive resistance as well as the highest struc-tural integrity. It is designed to restrict air flow movement between a cleanroom and its plenum, and to independently support the HEPA or ULPA filter units and other standard ceiling components.

Optional Gasketing for the Dry Seal System is 1/4" x 5/8" and is composed of a completely closed cell structure with minute cells and a smooth surface. It is pres-bond polyethylene foam, cross linked with polyethylene copolymer foam formulated to produce high resiliency and flexibility.

Applying the optional Gasketed, or Dry Seal, System pro-vides the ability to create optimal atmospheres for a high quality cleanroom environment. Manufactured for the ultimate in flexibility, economic value and ease of installation, these systems are designed to meet the exacting and varied standards of the cleanroom industry.

T-Bar Parts

Part Number	Description	Nominal Length	Web Depth	Flange Width	Weight per LF	Pieces per carton	Linear Feet per carton
138011	Main Tee	12'	1-3/8"	2"	0.75	8	96
138021	Cross Tee	4'	1-3/8"	2"	0.75	16	64
138022	Cross Tee	2'	1-3/8"	2"	0.75	36	72
138031	Wall Angle	12'	1-3/8"	1-1/4"	0.64	12	144
138041	Perimeter Tee	12'	1-3/8"	2"	0.75	8	96

Intersection Connector Castings, Screws & Gasketing

Part Number	Description	No. of Screws	Weight	Requirement
148052	9" RH/LH Rod	N/A	0.25	1 per Intersection
148053	4" Turnbuckle		0.25	1 per Intersection
148054	Inside Corner Connector	4	0.12	1 per corner
148055	Outside Corner Connector	4	0.12	1 per corner
148056	Perimeter Intersection Connector	6	0.18	1 per main tee or cross tee intersecting at the perimeter
148057	Special 3-Way Connector	6	0.18	
148058	4-Way Intersection Connector	8	0.23	1 per intersection
148059	Main T Splice Connector	4	0.12	1 per main tee
148061	Hold Down Clip-2 legs one bolt included		0.08	As Needed
148062	Hold Down Clip-1 leg one bolt included		0.08	As Needed
158011	1/4"-20 Phillips Pan Hd Screw			
158021	Gasket Roll 1/4" x 5/8"			

Threaded Receptacle for Rod and Turnbuckle
4-Way Connector
3-Way Perimeter Connector
Cross T
Main T Splice
1/4-20 Bolt
Wall Angle
Main T
Cross T
Main T
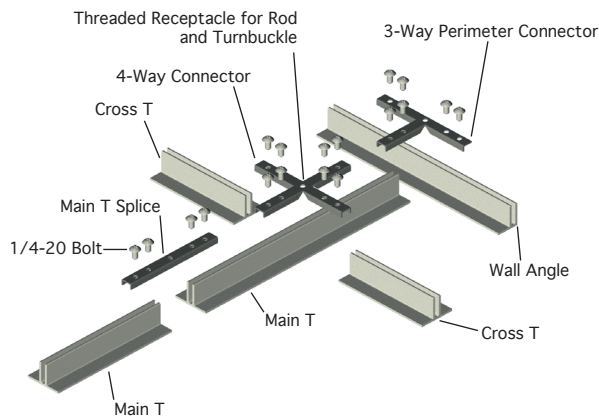
Specifications are subject to change without notice.

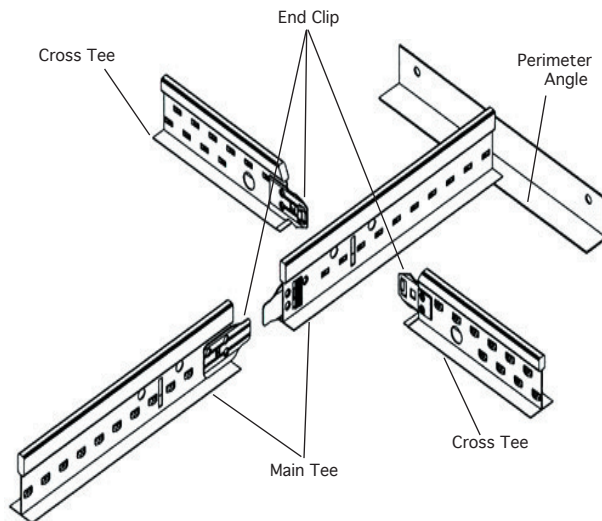| Load Specifications			
Loads Listed Are Static (Not Live) *Maximum Due To Allowable Stress Of Aluminum			
Deflection Formula	L/360	L/180	L/360
Hanger Spacing (span)	48"	48"	24"
Main Tee Spacing	48"	48"	48"
Maximum Load Point (Lbs.)	106	168	336
Maximum Uniform Load (Lbs./LF)	26.5	42	168
Applied Load (Lbs./SF)	17.8*	18.6	71.2*
Deflection at mid-span	1/8"	1/4"	1/16"
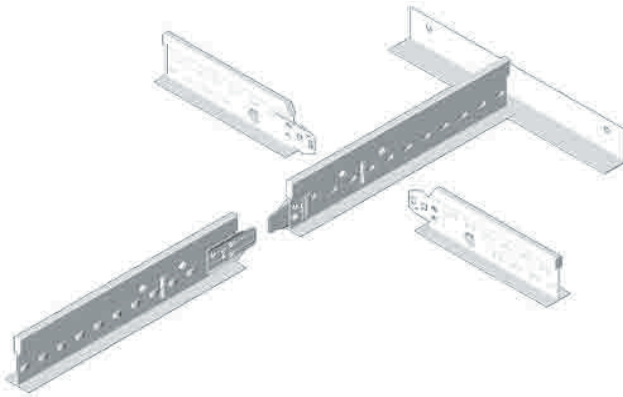
Abtech 15/16" and 1-1/2"
Cleanroom T-Grid System

Abtech, Inc. Cleanroom Grid Systems are designed and manufactured to prevent air movement between a Cleanroom and the plenum. Both the 15/16" and 1 1/2" Steel T-Grid Systems use gaskets to seal the horizontal surface where panels, lighting and air filters rest on the grid. This compression causes gaps to fill horizontally between system members, such as in the case of main tees meeting cross tees or wall angle.

Clip assembly requires no special tools. This allows for easy installation, which translates into great cost savings over complicated screwed or bolted systems.

Standard finish is painted white.

Specifications are subject to change without notice.

Load Data: A minimum 12 gauge hanger wire should support all four corners of the filter unit or light fixture. Load test recommendations outlined in the tables below should not be exceeded, nor should the components be deflected more than 1/360th of their span.

15/16" T-Grid System

Exposed Gasketed Flange	Web Height	Span Hanger Wire Spacing	Spacing of Main Tees	Applied Load LBS./SQ.FT.	ASTM
15/16"	1 1/2"	42"	48"	4.8	Heavy Duty
		48"	24"	4.5	Light Duty
			48"	2.2	Light Duty

1-1/2" T-Grid System

Exposed Gasketed Flange	Web Height	Span Hanger Wire Spacing	Spacing of Main Tees	Applied Load LBS./SQ.FT.	ASTM
1 1/2"	1 1/2"	24"	48"	14.7	Heavy Duty
		42"	48"	4.8	Heavy Duty
		48"	48"	2.6	Light Duty

Ordering Information:

15/16" T-Grid System

Part Number	Description	Nominal Length	Web Depth	Exposed Gasketed Flange	Weight per Linear Foot	Pieces per carton	Linear Feet per carton
168011	Main Tee	12'	1-1/2"	15/16"	0.18	40	480
168021	Cross Tee	4'	1-1/2"	15/16"	0.18	120	480
168022	Cross Tee	2'	1-1/2"	15/16"	0.18	120	240
168031	Wall Angle	12'	15/16"	15/16"	0.12	40	480
168032	Wall Angle	12'	1-1/2"	15/16"	0.16	30	360
168033	Wall Angle	12'	1-1/2"	15/16"	0.19	30	360

1-1/2" T-Grid System

Part Number	Description	Nominal Length	Web Depth	Exposed Gasketed Flange	Weight per Linear Foot	Pieces per carton	Linear Feet per carton
178011	Main Tee	12'	1-1/2"	1-1/2"	0.24	24	288
178021	Cross Tee	4'	1-1/2"	1-1/2"	0.24	72	288
178022	Cross Tee	2'	1-1/2"	1-1/2"	0.24	72	144
178031	Wall Angle	12'	1-1/2"	1-1/2"	0.22	30	360

Accessories for 15/16" & 1-1/2" Systems

MTS	Main Tee Splice	One Per Main Tee	Mill Finish
2W-clips	2 Way Clips	One Per Cross Tee	Mill Finish
HD-clips	Hold Down Clips	Any Quantity	Black Finish
90AC	90° Angle Clip	Any Quantity	Mill Finish

Abtech offers a full line of our Cleanroom Lighting Fixtures to serve as your one-stop source for Cleanroom Lighting Components. These Fixtures are available from Class 100,000-Class 10, ranging in a variety of styles and applications to choose from. The Lighting Fixtures featured in this media represent the best in industry lighting standards.

The AL-240 Lay-In Light Fixture Series is compatible with either a 1", 1-1/2" or 2" T-Grid System. For a ceiling layout which requires a 2" heavy extruded T-Grid System, our AL-241 Lay-In Light Fixture Series is produced specifically for that design.

Our Laminar Flow Teardrop Light Fixture Series is exceptional for use in tight, narrow applications, and they are suitable for use in 2" T-Grid systems. The fixture's 4 ft. length matches nominal grid length.

Abtech's Flow-Thru Troffer Series helps add the element of HEPA filtered air to your lighting needs, combining two important Cleanroom components into one efficient unit.

If needed, we offer assistance to our customers in job layout by providing "Point-By-Point" Foot-Candle Levels for each room.

Call Factory Direct for prices and information on your standard and custom Lighting specifications.

Lay-In Light Fixtures:
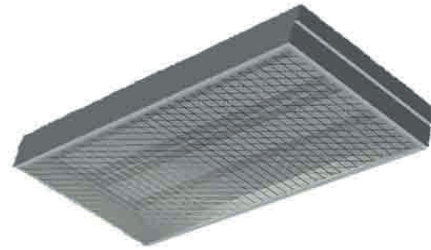
- 2' x 4' sealed, painted white, 20 ga. steel housing seals to grid.
- The housing and door are designed to fit either a standard or heavy extruded 2' x 4' ceiling grid opening.
- Sealed housing and door frame allow relamping without contamination of the clean areas.

Teardrop Light Fixtures:

- Abtech Teardrop light fixtures are ideal for use in laminar flow Cleanrooms.
- Narrow airflow design minimizes turbulence.

Flow-Thru Troffers:
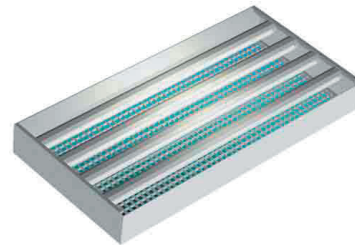
- Housing fabricated from 20 gauge steel.
- Combines Cleanroom airflow with lighting.
- All tested and in compliance with Federal standard 209D.

Specifications are subject to change without notice.

The Abtech Cleanroom Lay-In Light Fixture is ideal for Cleanrooms, pharmaceutical and biomedical labs, food processing centers, hospitals and wet locations. The totally sealed housing maintains ceiling integrity and protects against infiltration of particles and airborne bacteria.

The housing and door are designed to fit a standard 2' x 4' ceiling grid opening. Housings are 20 gauge, painted with a white Polyester powdercoat finish with 92% reflectance.

Sealed door and housing allow relamping without contamination of the clean areas. The lens frame is removable from roomside, and it is flush mounted with T-Grid and seals to the housing. Lens is installed with smooth surface on outside for easy cleaning. Sealed, captive flat head screws secure the lens frame in the closed position.

Gasketed wiring access cover on the top allows easy access for wiring to the building power source.

Standard ballasts are 120V, T8/32W electronic for use with (4) medium bi-pin lamps. The ballast is mounted inside the housing and is removable from roomside. Other voltages are available.

These luminaires are U.L. listed and manufactured in accordance to U.S.D.A., F.D.A., and N.S.F. guidelines. All fixtures have been tested and reported in compliance with Federal Standard 209D and are suitable for Class 100,000 to Class 10 Cleanrooms.

Right: AL-240

Left: AL-241
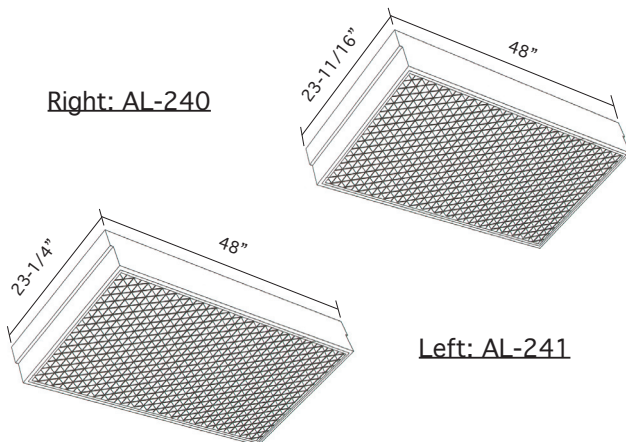
Specifications:

AL-240

TYPE:
T-Bar mounted square sided Class 100,000-Class 10 Cleanroom fixture. Applicable where a sealed ceiling situation exists. Compatible with standard inverted T-Bar ceilings 1" or 1-1/2" width.

LENS FRAME:
Overlap 20 Gauge lens frame is sealed to grid with closed cell neoprene gasket. Lens is silicone sealed to lens frame to prevent contaminants from entering the room.

OPTICS:
.125" Clear prismatic acrylic or as specified.

CONSTRUCTION:
Die formed 20 gauge cold rolled steel housing with welded construction. All parts are fitted and sealed, no unused holes of KO's.

FINISH:
High reflectance baked white powdercoated finish with 92% reflectance, painted after fabrication.

WIRING:
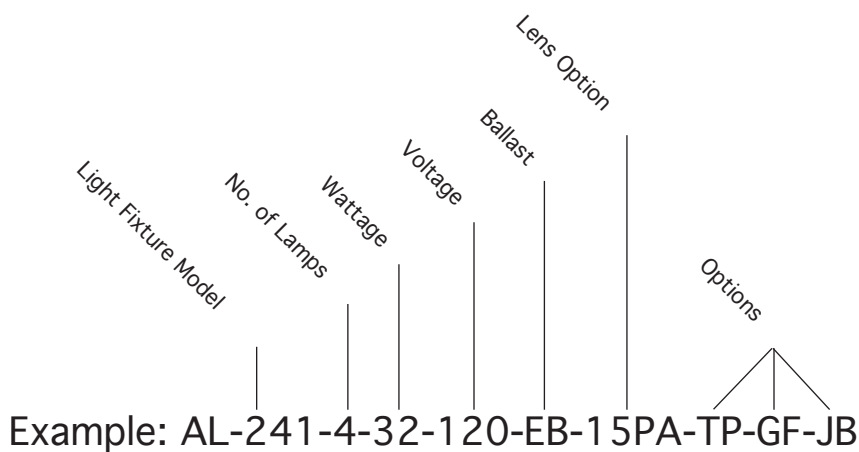120 Volts. 60 Hz. Unless otherwise specified.

LABELS:
U.L. Listed. Suitable for wet locations.

AL-241

TYPE:
Square sided, Class 100,000-Class 10 Cleanroom fixture. Applicable where a sealed ceiling situation exists. Compatible with 2" standard or heavy extruded inverted T-Bar ceilings.

LENS FRAME:
20 Gauge cold rolled steel; lens frame flush with T-Grid, seals to hou-sing. Door frame and lens are sealed with closed cell neoprene gasket.

OPTICS:
.125" Clear prismatic acrylic or as specified.

CONSTRUCTION:
Die formed 20 gauge cold rolled steel housing with welded construction. All parts are fitted and sealed, no unused holes of KO's.

FINISH:
High reflectance baked white powdercoated finish with 92% reflectance, painted after fabrication.

WIRING:
120 Volts. 60 Hz. Unless otherwise specified.

LABELS:

Specifications are subject to change without notice.

Ordering Information for AL-240 & AL-241

Specify   -   -   -   -   -

No. of LAMPS	Wattage	Voltage	Ballast	Lens Option	Options

2=2 Lamps
3=3 Lamps
4=4 Lamps
6=6 Lamps
	32=32 Watts
	   (T-8)
	40=40 Watts
	   (T-12)
		120=120 Volts
		277=277 Volts
		347=347 Volts
			EB=Electronic
			   Ballast
			MB=Magnetic
			   Ballast
			EB2=(2) Elec.
			   Ballasts
			EBH=<10% THD
			   El. Ballast
				12PA=.125" Prism
				   Acrylic
				15PA=.156" Prism
				   Acrylic
				15PG=.156" Prism
				   Glass
				18PP=.187" Prism
				   P/C
				UO =UV Absorbing
				   Overlay
					TP=Tamperproof
					   Screws
					GF=GLR Fuse
					NL=Night Light
					   (PL-7 or 9)
					DB=Dimming
					   Ballast
					EM=Emergency
					   Lighting
					CW=Cold Weather
					   Ballast
					RF=Radio Frequency
					   Interference
					   Filter
					JB=Internal Junction
					   Box
					AHP=Aluminum
					   Housing
					   Painted
					AFP=Aluminum Lens
					   Frame, Painted
					AFA=Aluminum Lens
					   Frame, Anodized
					SHP=Stainless Steel
					   Housing, Painted
					SFP=Stainless Steel
					   Lens Frame,
					   Painted
					SFN=Stainless Steel
					   Lens Frame,
					   Natural
					SG=Special Grid
					   Housing

Light Fixture Model   No. of Lamps   Wattage   Voltage   Ballast   Lens Option   Options

Example: AL-241-4-32-120-EB-15PA-TP-GF-JB

- T-8 ballast available in either 120 or 277 Volt
- Mounts directly to 2" T-Bar.
- Labellings are U.L. listed, C.S.A. certified, standard wet label.

Four recessed, 7/8" diameter knockouts, one on each end cap and one on each end of the mounting surface, allow connection of vapor tight conduit fitting for either continuous row mounting or top access.

#AL400	4' Teardrop	120V	1 lamp	T8
#AL401	4' Teardrop	277V	1 lamp	T8

The Abtech Teardrop light fixture is designed for use in vertical, laminar air flow Cleanrooms. The narrow, airfoil design minimizes turbulence in Cleanrooms that require unidirectional air flow. Enclosed and gasketed housing allows mounting directly to 2" Tee-Grid systems. The lens is a one piece, clear extruded prismatic acrylic lens that maintains a smooth, environmentally viable side with an internal horizontal prism pattern, while the end lens gasketing seals the lens to the end cap to prevent entrapment of biohazardous contaminants which could grow inside the fixture. These luminaires are U.L. listed and C.S.A. certified for wet locations and are manufactured in accordance with U.S.D.A., F.D.A., and N.S.F. All fixtures have been
tested and reported in compliance with Federal Standard 209D.

The housing is die-formed, 20 ga. steel housing with welded seams and end caps. Finish is standard white 92% reflectance polyester powdercoat.

Applications for the teardrop light fixture include use in Cleanrooms, technical and biomedical labs, food pro-cessing/testing centers, hospitals and pharmaceutical labs.
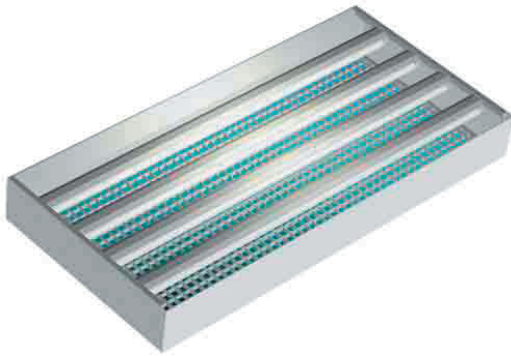
Further Ordering Information:

Ballast:
EB=Electronic Ballast
MB=Magnetic Ballast
EBH=<10% THD Electronic Ballast

Lens:
CL=Clear Lens, Prismatic
OL=Opal Lens
UV=Ultra Violet Yellow Lens

Options:
EM=Emergency Lighting
GF=GLR Fuse
AHP=Aluminum Housing Painted
DB=Dimming Ballast
CW=Cold Weather Ballast
SHP=Stainless Steel Housing painted
RF=Radio Frequency Interference
        Filter

example: AL801-EB-CL-EM-AHP

48"

2"

6"
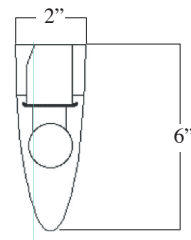
- Shipping Weight 12 Lbs. Flourescent lamp tubes not included.

Specifications are subject to change without notice.

- Door frame is flush with T-Grid and seals to the Housing.
- Housing accepts standard 2' x 4' HEPA air filter.
- Gasketed Access Plate.
- Optional Lamp Reflectors.
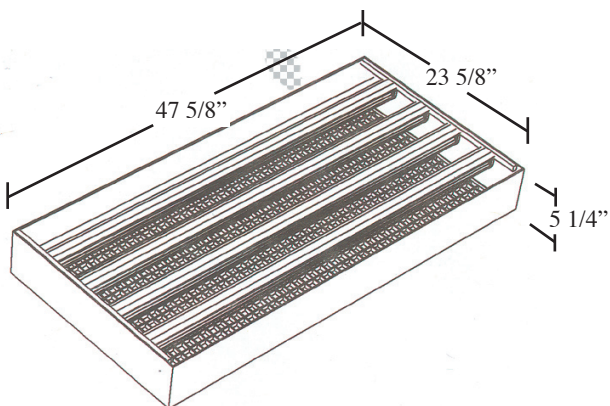- Shipping weight 31 Lbs. Fluorescent lamp tubes not included.

The Abtech Flow-Thru Troffer allows HEPA filtered air to flow through the fixture and into the Cleanroom. It is ideal for Class 10 to 100,000 Cleanroom environments, including electronic laboratories, biomedical laboratories, pharmaceutical laboratories, hospitals, and R & D testing centers. Housing fits into either 1", 1-1/2" or 2" standard T-Grid systems, and accepts standard 2' x 4' HEPA air filter.

The troffer contains no holes which would allow air passage from a plenum through the fixture, while closed cell gaskets and silicone seal the T-Grid system to prevent unfiltered air from entering the cleanroom. The housing is fabricated from 20 gauge steel with spot welded, sealed ends and is finished with a white powdercoating.

Standard ballasts are 120V, T8/32W electronic for use with (4) medium bi-pin lamps. The ballast is mounted inside the housing and is removable from roomside. All electrical components are U.L. listed. Other voltages and lamp specifications are available.

A white box cell louver (1/2" x 1/2" x 1/2") is inserted in an anodized extruded aluminum frame which is hinged to open, permitting removal of the lamps and ballast from roomside.

All fixtures have been tested and reported in compliance with Federal Standard 209D.

#AL901	2' x 4'	120V	4 lamp	T8
#AL902	2' x 4'	277V	4 lamp	T8

Louver Type:
5BC=.5" Box Cell White Acrylic

Further Options:

TP=Tamperproof Screws
GF=GLR Screws
LR=Lamp Reflectors
DB=Dimming Ballast
EM=Emergency Lighting
CW=Cold Weather Ballast
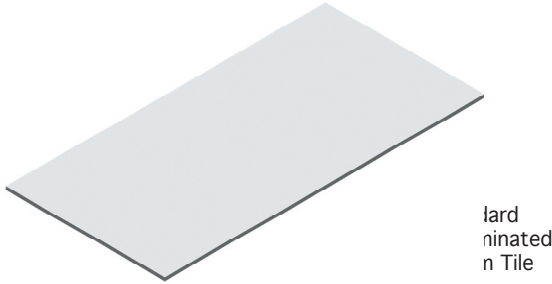AHP=Aluminum Housing painted
SHP=Stainless Steel Housing Painted
RF=Radio Frequency Interference Filter

example: AL901-5BC-TP-EM-SHP

Specifications are subject to change without notice.

47 5/8" 23 5/8" 5 1/4"

28

Abtech Inc.   3420 West Fordham Ave.   Santa Ana, CA 92704   ph.# [800] 394-7699 fax# [800] 394-5733

Abtech Ceiling Panels:

dard
minated
n Tile

Abtech Cleanroom Ceiling Tiles are used to seal spaces in the T-Grid System not occupied by a Lighting Fixture or Fan Powered Filter Unit. Nominal Sizes are 24" x 48" x 1/2" (23 3/4" x 47 3/4" actual). Material choices include Vinyl Laminated Gypsum, Aluminum, and Fiberglass Reinforced Plastic (see opposite for detailed descriptions).

Offering Superior Quality and Exceptional Value, Abtech Cleanroom Ceiling Tiles set the standard for appearance and safety. They are the ideal choice for most cleanroom ceiling applications.
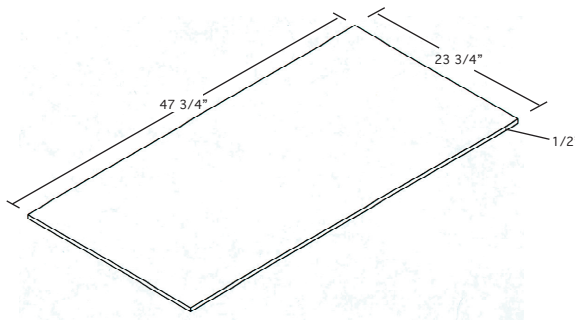
Model #	Standard Size & Material
ACT2448G	23 3/4" x 47 3/4" Gypsum
ACT2448A	23 3/4" x 47 3/4" Aluminum
ACT2448F	23 3/4" x 47 3/4" FRP

- Abtech ceiling panels are designed for low particle emission and maximum ease of cleaning maintenance in Cleanrooms and other environmentally controlled areas.
- Class 100,000-Class 1.
- A variety of colors and styles provide an aesthetically pleasing ceiling system to suit any environment.

Material Choices:

Gypsum

Abtech Gypsum Ceiling Tiles feature high light reflectance and impact resistance. The 1/2" thick rigid panels prevent sagging and warping typically associated with conventional ceiling panels.

The noncombustible gypsum core ensures fire safety with a Class A (1) flame spread, which is achievable depending upon fire-rated assembly.

Drop in place panels allow for quick and easy installation. Stains and common dirt can be removed with mild soap and water. The sturdy white vinyl laminate completely eliminates the need for additional finishing.

Tiles are laminated on room side only with a protective sealant on all exposed edges.

Aluminum

Abtech 1/8" Thick Powder Coated Aluminum 6063-T5 Tiles offer a higher impact resistance. These tiles are typically used with the 2" gasketed aluminum T-Grid Systems, and allow for future retrofitting of lines or equipment connections.
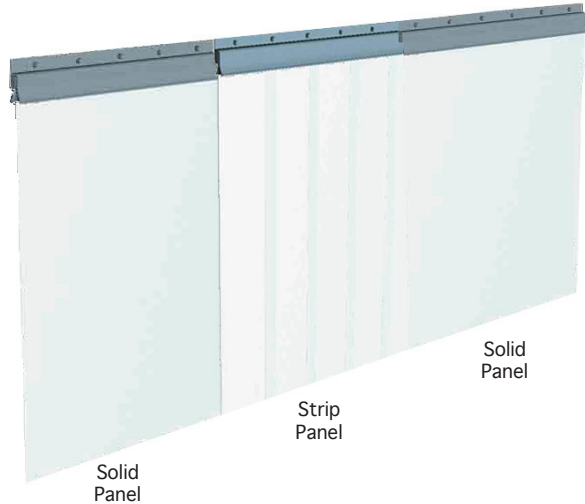
Tiles are coated on Room Side only.

.120 inch FRP (Fiberglass Reinforced Plastic)

Abtech FRP Ceiling Tiles are a durable and tough building material made into panels which have a Class A (1) flame spread. The smooth .120" FRP panels are designed for interior wall finishes where a Class A, sanitary, easy to clean panel is desired.
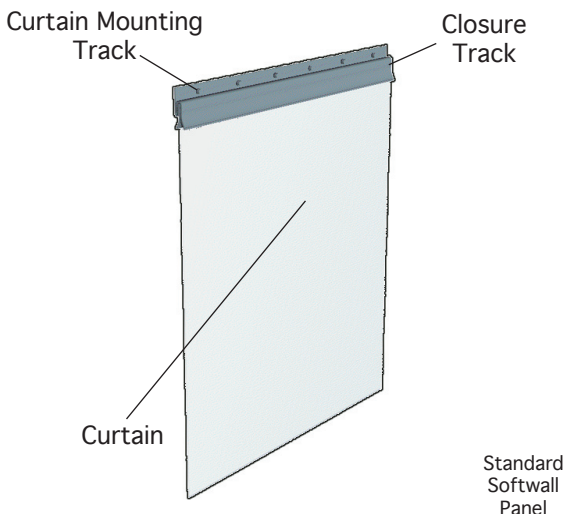
These tiles provide greater resistance to corrosive environments.

Specifications are subject to change without notice.

Solid Panel

Strip Panel

Solid Panel

Our cleanroom curtain product line offers a variety of styles to meet any kind of specification that you have a need for, including:

- Softwall Panels
- Strip Curtains
- Sliding Track Curtains
- Accordion Style Curtains.

Cleanroom curtain material options include: Standard, Low-Stat, ESD Safe, Conductive, Non-Outgassing, U.V. Safe or Frosted.

Please call us at Abtech, Inc. with any further questions about our Cleanroom Curtain lines.

Abtech Cleanroom Curtains are the preferred way to keep sensitive Softwall Cleanroom work areas free of contaminants. They are comprised of a variety of dif-fer-ent materials and attachment methods depending on the specific project requirements. With the best instal-lation system available, Abtech Cleanroom Curtains add versa-tility, convenience and a high-tech appearance to a product line already combining strength, durability and affordability, making it the choice of industry profession-als.

The innovations and improvements on this design makes installation and replacement easier than ever. Once the mounting channel is anchored to either ceiling or wall, no further nuts or bolts are necessary. The extruded vinyl hook on top of each curtain is secured to the mounting channel by the matching facia plate.

STANDARD SOFTWALL PANELS

Abtech Softwall Panels are solid, yet flexible vinyl curtains that function as walls or room dividers in a cleanroom environment. These curtains are made from a variety of materials ranging from 12 mil. to 80 mil. depending upon the requirement of the application. Smaller softwalls, sometimes referred to as Air Flow Shields, are commonly used to insure laminar flow over sensitive work areas which do not require personal ac-cessibility. Softwall panels and Air Flow Shields are typi-cally made of 40 mil. vinyl with non-weighted bottoms, or 20 mil. vinyl with weighted bottoms.

Softwall Panels can be attached by one of four sys-tems: Dual-Lock, Vinyl Welt, Nut & Bolt, or Sliding Track.

ANTISTATIC SOFTWALL PANELS

Any material that reduces electrostatic discharge can be referred to as Antistatic, but the quality of perfor-mance of these so-called Anti-Static curtains can vary greatly. At Abtech, we only use materials that have been tested ESD Safe. We do not use topically treated antistatic materials that can wear away.

Along with our line of ESD Safe materials, we also offer materials that meet or exceed the flame spread requirements of UBC Class 1 and NFPA Class A. Non-outgassing materials can also be provided.

Curtain Mounting Track

Closure Track

Curtain

Standard Softwall Panel

Specifications are subject to change without notice.

STRIP SHIELDS

Strip Shields are a unique product made by attaching 40 or 60 mil. strips ranging from 4" to 24" wide to a continuous piece of Dual-Lock. This 'one panel' design produces a pre-assembled strip curtain that is extremely easy to install. Strip Shields are ideal for areas where there is a need for personnel accessibility. They make excellent entry ways for Softwall Cleanrooms, and they can be used to divide areas within the Softwall Cleanroom's interior areas

STRIP CURTAINS

Strip Curtains are made of heavy duty individual 8" wide, 80 mil. strips available in a variety of colors and formats. They are used in applications where there is a great deal personnel and/or light cart traffic in and out of a particular area. 80 mil. Strip Curtains made of lighter materials.

Softwall Panels can be attached by one of four systems: Dual-Lock, Vinyl Welt, Nut & Bolt, or Sliding Track.
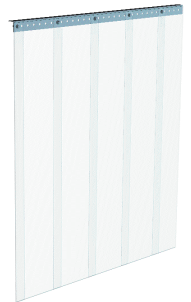
SLIDING TRACK CURTAINS

Sliding Track Curtains are made for applications that require movable curtains. The curtain assembly consists of hangers suspended from trolleys which roll inside a special anodized aluminum C-channel. Hangers then hook through grommets located at the top of the curtain. As with all Abtech Curtains, these are available in a wide variety of colors. Anti-Static, ESD Safe, Conductive, and Non-Outgassing are also available.
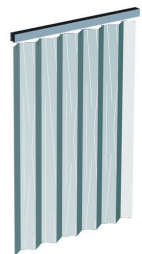
ACCORDION STYLE CURTAINS

Accordion Style Curtains are the newest way to effectively enclose or partition any area within your work environment. The sliding track hardware assembly allows the curtain to move easily into place when needed. When not in use, the curtain requires very minimal storage space due to its unique folding panels.

Valance Curtains are available for both accordion style and standard sliding track curtains to help provide light safe environments when necessary.

Specifications are subject to change without notice.

Abtech, INC.

INPLANT
OFFICE

- **ONE & TWO STORY INPLANT OFFICES**
- **OFFICE MEZZANINE SYSTEMS**
- **FORKLIFTABLE GUARD BOOTHS**
- **PARTITIONS**
- **CLEANROOMS**
- **ENVIRONMENTAL CONTROL ROOMS**
- **COMPLETELY MODULAR DESIGN**
- **EXPANDABLE AND RELOCATABLE**
- **INSTALLATION OPTION**
- **DESIGN AND ENGINEERING**
- **MANY WALL FINISHES AVAILABLE**

Abtech IP3 Inplant Offices provide the "End-User" with a Modular System which serves to divide a large work space, such as a warehouse or a manufacturing plant, with an environment suitable for the administration of business. They can be designed as a single, open area unit, or with interior walls to separate personal work space from a main office area. Partitions can also be provided. Aesthetically pleasing as well as functional, our Inplant Offices are manufactured to create or augment any space so your business makes the impression you want it to.

The Abtech IP3 Series Inplant Offices can be constructed in a variety of ways, using our pre-defined specifications, or implementing an "End-User" custom design. Options for construction include single story or two story modular office systems, and they can be built to serve a specific purpose other than office space, such as Vision Towers. As it is a completely modular system, expansion and flexibility provide major construction advantages. The many upgrade opportunities to enhance efficiency and utilization make the IP3 Series a great way to integrate an office environment within any inclosed setting.

Call factory direct for prices on standard or custom sizes.
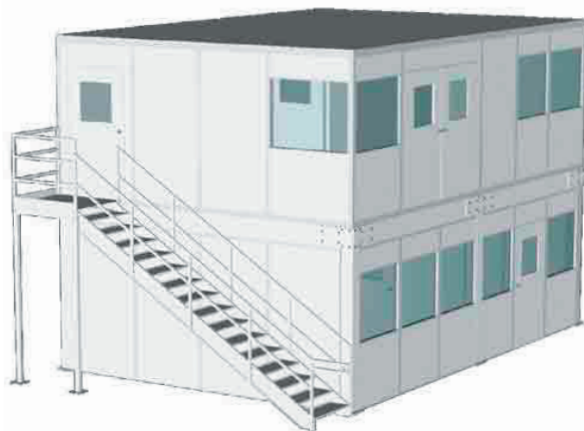
TWO LEVEL INPLANT OFFICE

Single Level Offices

model#	nominal size	model#	nominal size
IP3-888	8'6"X8'6"	IP3-12128	12'6"X12'6"
IP3-8108	8'6"X10'6"	IP3-12148	12'6"X14'6"
IP3-8128	8'6"X12'6"	IP3-12168	12'6"X16'6"
IP3-10108	10'6"X10'6"	IP3-12188	12'6"X18'6"
IP3-10128	10'6"X12'6"	IP3-12208	12'6"X20'6"
IP3-10148	10'6"X14'6"	IP3-16168	16'6"X16'6"
IP3-10168	10'6"X16'6"	IP3-16188	16'6"X18'6"
IP3-10188	10'6"X18'6"	IP3-16208	16'6"X20'6"
IP3-10208	10'6"X20'6"	IP3-20208	20'6"X20'6"

Specify All Desired Custom Changes At The Time Of Ordering. IP3 Standard Height is 8'. If Necessary, Custom Heights Are Available.

Specifications are subject to change without notice.

Abtech, INC.

PANELS:

The panels are nominal 3-inch thick with standard sizes from four feet wide by eight feet tall to four feet wide by ten feet tall. Custom heights over ten feet are also available. Panel construction varies over a wide range.

• Standard panels are vinyl laminated 1/8" tempered hardboard, both sides of honeycomb core.

• Fire and sound rated panels are vinyl laminated 1/2" gypsum, both sides of expanded polystyrene foam core.

• Exterior building panels have prefinished 1/8" forest fiber hardboard exterior and vinyl laminated 1/8" tempered hardboard interior with an expanded polystyrene foam core.

• Metal wall panels will have either 26 ga. pre-painted steel or .019 prepainted aluminum skins laminated to 1/8" tempered hardboard, both sides of honeycomb or expanded polystyrene foam core. Many more custom panel configurations are available.

POSTS:

Posts are to be of four-piece design to form a non progressive wall system. Cavity of posts will allow use of approved steel electrical boxes that are now required by building codes. Posts shall also act as raceways for phone lines, data lines, and other electrical lines. Structural design loading on posts allows up to 4,500 vertical pounds or an additional structural steel cavity insert can be installed for loads up to 12,000 lbs. The structural elements of the posts shall be connected by machine bolts and nuts no more than 18" center line. All extrusions shall be 6063-T5 aluminum, minimum .062 thickness, with a clear anodized finish.

CORNER POSTS:

Corner posts will be of single piece construction and support loads of up to 4,500 vertical pounds. Structural steel cavity inserts can be added for loads up to 12,000 pounds. Material will be 6063-T5 aluminum, minimum .062 thickness, and clear anodized finish.

BASE CHANNEL:

Base channel provides support for wall panels and posts while allowing space for anchors or post uplift connectors. Its low profile design is aesthetically pleasing and eliminates the need for additional base molding. Material shall be 6063-T5 aluminum, minimum .062 thick, and clear anodized finish.

VISION TOWERS

CAPPING CHANNEL:

Capping channel acts as a support for vertical deck loads in addition to serving as a continuous diaphragm member. Material is 6063-T5 aluminum, minimum .062 thickness, and clear anodized finish.

DOORS:

Doors will be 1 3/4" thick and standard 42" wide by 80" tall to accommodate equipment or furniture. Door material will match wall panels and be framed in an aluminum channel for heavy traffic areas. Door jamb is a heavy duty extrusion designed to eliminate weak door panel frames. All doors are factory prehung with hinges and door lockset. Windows with 3/16" tempered safety glass are optional. Extrusions are 6063-T5 aluminum, minimum .062 thickness, with clear anodized finish.

WINDOWS:

Standard fixed windows are 44" wide by 40" tall with 3/16" tempered safety glass installed in aluminum frame. Window units are completely modular. Horizontal sliding and pass thru windows can also be provided. Frames are 6063-T5 aluminum, .062 minimum thickness, with clear anodized finish.

ROOF DECK:

Roof deck is designed to act as building diaphragm and support ceiling loads of up to 15 lbs. per sq. ft. Deck can clear span to 20 feet length. Material is 22 ga., corrugated, galvanized steel. Thicker material can be used for heavy loading.

CEILING SYSTEM:

Ceiling grid will be heavy duty white enameled steel T-BAR hung from roof decking by 12 ga. galv. ceiling wire and self tapping sheet metal screws. Ceiling tiles are 2' x 4', 5/8" thick, random fissured, vinyl faced rigid fiberglass. Additional R-19 insulation is optional.

FLOOR:

Optional 12" x 12" x 1/8" thick Vinyl tile or Carpet

ELECTRICAL:

Fluorescent light fixtures are 2' X 4', 4-TUBE, 120v, less tubes. Duplex outlets and light switches, 120v, with approved electrical box and post knockout (conduits and wire not included).

HVAC:

Thru wall systems or central air systems are available. Consult factory for design assistance.

INSTALLATION:

Factory installation is available for the full line of materials.
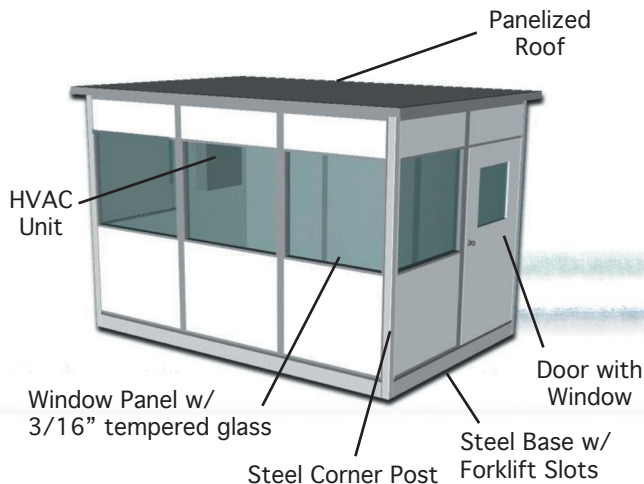
Abtech PR3 Series Pre-Assembled Buildings are designed to provide the End User with a complete Prefabricated Modular Building which can be lifted by forklift or crane.

The standard system consists of a Welded Tubular and Structural Steel Frame with a Panelized Wall and Roof System. The Floor is Structural Grade Plywood with Vinyl Composition Tile. A complete Electrical system is provided and includes Lights, Duplex Outlets, Switches, Sub Panel, Breakers, Conduits and Wiring. HVAC package is mounted in a Pre-framed Panel and supplies Cooling, Heating and Fresh Air.

All components are prefabricated and completely Modular in design. Buildings can be designed for Interior or Exterior use.

model#	nominal size	model#	nominal size
PR3-448	4'0"X4'0"	PR3-888	8'0"X8'0"
PR3-468	4'0"X6'0"	PR3-8108	8'0"X10'0"
PR3-488	4'0"X8'0"	PR3-8128	8'0"X12'0"
PR3-668	6'0"X6'0"	PR3-8148	8'0"X14'0"
PR3-688	6'0"X8'0"	PR3-8168	8'0"X16'0"
PR3-6108	6'0"X10'0"	PR3-8188	8'0"X18'0"
PR3-6128	6'0"X12'0"	PR3-8208	8'0"X20'0"

Panelized Roof

HVAC Unit

Window Panel w/ 3/16" tempered glass

Steel Corner Post

Door with Window

Steel Base w/ Forklift Slots

SPECIFICATIONS:

PANELS:
The wall and ceiling panels are nominal 3-inch thick with standard sizes from four feet wide by eight feet tall to four feet wide by ten feet tall. Custom heights over ten feet are also available. Panel construction varies over a wide range. Standard Metal wall panels will have either Embossed 26 ga. pre-painted steel or .019 prepainted aluminum skins laminated to 1/8" tempered hardboard both sides of honeycomb or expanded polystyrene foam core. Many more custom panel configurations are available.

POSTS:
Posts are to be of four-piece design to form a non-progressive wall system. Cavity of posts will allow use of approved steel electrical boxes that are now required by building codes. Posts shall also act as raceways for phone lines, data lines, and other electrical lines. The structural elements of the posts shall be connected by machine bolts and nuts no more than 18" center line. All extrusions shall be 6063-T5 aluminum, minimum .062 thickness, with a clear anodized finish.

CORNER POSTS:
Corner posts will be 3" x 3" Steel Tube welded to Structural Steel Channel base frame.

BASE CHANNEL:
Base channel provides support for wall panels and posts while allowing space for anchors or post uplift connectors. Its low profile design is aesthetically pleasing and eliminates the need for additional base molding. Material shall be 6063-T5 aluminum, minimum .062 thick, and clear anodized finish.

CAPPING CHANNEL:
Capping channel acts as a support for vertical deck loads in addition to serving as a continuous diaphragm member. Material is 6063-T5 aluminum, minimum .062 thickness, and clear anodized finish.

DOORS:
Doors will be 1 3/4" thick and standard 42" wide by 80" tall to accommodate equipment or furniture. Door material will match wall panels and be framed in an aluminum channel for heavy traffic areas. Door jamb is a heavy duty extrusion. All doors are factory prehung with hinges and door lockset. Windows are 2 'x 2' with 1/4" tempered safety glass. Extrusions are 6063-T5 aluminum, minimum .062 thickness, with clear anodized finish.

WINDOWS:
Standard fixed windows are 44" wide by 40" tall with 3/16" tempered safety glass installed in aluminum frame. Window units are completely modular. Horizontal sliding and pass thru windows can also be provided. Frames are 6063-T5 aluminum, .062 minimum thickness, with clear anodized finish.

ROOF SYSTEM:
Standard Steel faced, foam core, flat metal panels.
Optional Gable Roof Panels with 3 in 12 slope, panels are Steel faced with foam core.

CEILING SYSTEM:
Optional heavy duty white enameled steel T-BAR hung from roof by 12 ga. galvanized ceiling wire and self tapping sheet metal screws. Ceiling tiles are 2' x 4', 5/8" thick, Mineralboard. Additional R-19 insulation is optional.

ELECTRICAL:
Surface Mount Fluorescent light fixtures are 2' X 4', 4-TUBE, 120v, less tubes. Duplex outlets and light switches, 120v, with approved electrical box and post prep. Sub panel and breakers.

FLOOR:
Standard 1 1/8" thick Playwood with 12" x 12" x 1/8" vinyl floor tile. Optional Steel or Aluminum Diamond Plate.

HVAC:
Thru wall systems or central air systems are available. Consult factory for design assistance.

Specifications are subject to change without notice.

Abtech, INC.

- **MULTI LEVEL SYSTEMS**
- **OFFICE/MEZZANINE SYSTEMS**
- **VISION TOWERS**
- **CAGE SYSTEMS**
- **CATWALKS**
- **COMPLETELY MODULAR DESIGN**
- **EXPANDABLE AND RELOCATABLE**
- **INSTALLATION OPTION**
- **DESIGN AND ENGINEERING**
- **LONG, CLEAR SPANS**
- **HIGHLY DURABLE/LONG LASTING**

The Abtech Mezzanine System is a Free-Standing, Modular Steel Structure that can be used in a variety of space saving concepts. Common uses include: Storage Platforms; Elevated or Multilevel Offices; Vision Towers; Equipment Platforms; etc. Floor-space can be increased quickly and economically. Our Modular design easily allows for future expansion or relocation to a different facility.

Abtech Mezzanines are designed to meet the customer's size and loading requirements. Structural Steel Members are prefabricated and painted for Installation by end user or Factory Trained Installers. Systems can be Structurally engineered to meet different seismic zones and existing conditions. Optional Modular Walls, Wire Mesh Fence, Gates, Handrail, Stairs, Ladders, Lighting and Electrical packages are also available.

model#	nominal size	model#	nominal size
STM-2020	20'0"X20'0"	STM-3030	30'0"X30'0"
STM-2022	20'0"X22'0"	STM-3032	30'0"X32'0"
STM-2024	20'0"X24'0"	STM-3034	30'0"X34'0"
STM-2026	20'0"X26'0"	STM-3036	30'0"X36'0"
STM-2028	20'0"X28'0"	STM-3038	30'0"X38'0"
STM-2030	20'0"X30'0"	STM-3040	30'0"X40'0"

Specify Clear Height: (8)=8 ft. (10)=10 ft. (12)=12 ft. (14)=14 ft. (16)=16 ft. Example: for STM-3034 Class Mezzanines, add "12" to model# (STM-3034-12) for 12' Clear Height.

If necessary, custom Clear Heights are available.

Specifications are subject to change without notice.

DECKING:
Abtech provides a variety of decking surfaces depending on load and traffic requirements. The 1 1/2" thick steel deck is covered by 1 1/8" thick T& G Plywood, which handles the most standard mezzanine design loads at 125 psf. Furthermore, a vareity of flooring can be utilized. In some office applications 1 1/8" Plywood may be adequate without Metal Deck.
STEEL GRATING is available in two different forms. Bar Grating (stronger and more costly) and Roll Form Grating are good choices, when Sprinklers or Lighting fixtures are not practical below the Mezzanine.
STEEL CHECKERED PLATE in 1/4" thickness provides a durable nonskid surface. It can also be painted and is good for high traffic areas. OPTIONAL floor coverings are Vinyl Tile, Rubber Tile, Vinyl Sheet Flooring, Carpet.

BEAMS:
Wide Flange Structural Steel Beams span across the Mezzanine and support the decking on 4' centerlines. They are predrilled for attachment to Perimeter Channels.

PERIMETER CHANNELS:
Perimeter members are Structural-C sections of various sizes (depending on loading and span) with predrilled Beam Flanges and ends for bolted connections. These members are attached to the Columns and provide support for Beams.

COLUMNS:
Columns are standard 8"x8"x1/4" Steel tubing. Steel plate flanges are provided for bolted connections between Columns and Perimeter Channels. Base Plates are minimum 12"x12"x1/2".

GATES:
Gates can be provided for additional access for loading and unloading materials. Lift Out, Hinged, Double Hinged, and Sliding are further options.

TOUNGE AND GROOVE PLYWOOD OVER CORROGATED GALVANIZED STEEL DECKING

3" SQUARE STEEL COLUMN

8" SQUARE STEEL COLUMN

PREFABRICATED STEEL DIAMOND PLATE OPEN RISER STAIRS AND LANDING

12" STRUCTURAL STEEL CHANNEL PERIMETER FRAMING

STAIRS AND LANDINGS:
Stairs are provided with Structural Steel Stringers and 36"x12" Steel Checkered plate Treads with open riser. Standard 2-Rail Handrail is included. Landings are prefabricated and predrilled for bolted connection to Mezzanine and support Columns. Standard 2-Rail Handrail with 4" Toekicks are provided.

OPTIONS:
Optional materials include Office Enclosures top and bottom levels, Multi story configurations, Wire Mesh Enclosures, Ladders, Closed Riser Stairs, Multi Level Stairs and Landings, Catwalks, Lighting Systems.

HANDRAIL:
Handrail is 1 1/2" square Tubing and includes a top rail, center rail, and 4" Toekick plate. Overall height is 42". Rails are painted Safety Yellow and are Predrilled for bolted connections. Optional designs include Wire Mesh, Solid Panels, and additional Rail requirements based on occupancy.

INSTALLATION:
Factory installation is available for the full line of materials.

Specifications are subject to change without notice

# Modular EX3 Series Exterior Buildings

Abtech EX3 Series Modular Exterior Buildings are prefabricated for simple on site assembly. Buildings can be designed as single or multi-level systems.

The Modular Exterior Buildings provide the "End-User" with a Modular System which serves to control the working environment in any setting, such as a warehouse, manufacturing plant, or job sites with an environment suitable for the administration of business. They can be designed as an open area unit, or with interior walls to separate personal work space from a main office area. Partitions can also be provided. Aesthetically pleasing as well as functional, our Exterior Buildiings are manufactured to create or augment any space so your business makes the impression you want it to.

Single Level Buildings

model#	nominal size	model#	nominal size
EX3-888	8'6"X8'6"	EX3-12128	12'6"X12'6"
EX3-8108	8'6"X10'6"	EX3-12148	12'6"X14'6"
EX3-8128	8'6"X12'6"	EX3-12168	12'6"X16'6"
EX3-10108	10'6"X10'6"	EX3-12188	12'6"X18'6"
EX3-10128	10'6"X12'6"	EX3-12208	12'6"X20'6"
EX3-10148	10'6"X14'6"	EX3-16168	16'6"X16'6"
EX3-10168	10'6"X16'6"	EX3-16188	16'6"X18'6"
EX3-10188	10'6"X18'6"	EX3-16208	16'6"X20'6"
EX3-10208	10'6"X20'6"	EX3-20208	20'6"X20'6"

Specify All Desired Custom Changes At The Time Of Ordering. EX3 Standard Height is 8'. If Necessary, Custom Heights Are Available.
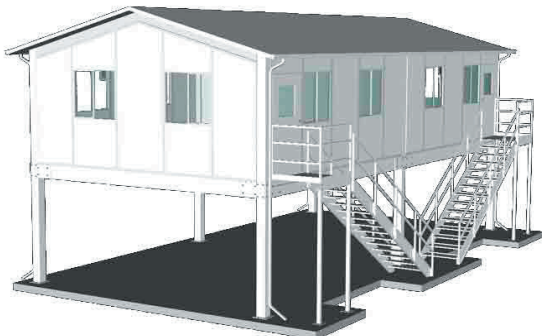
SPECIFICATIONS:

PANELS:
The panels are nominal 3-inch thick with standard sizes from four feet wide by eight feet tall to four feet wide by ten feet tall. Custom heights over ten feet are also available. Panel construction varies over a wide range. Standard **Metal wall panels** will have either Embossed 26 ga. prepainted steel or .019 prepainted aluminum skins laminated to 1/8" tempered hardboard both sides of honeycomb or expanded polystyrene foam core. Many more custom panel configurations are available.

POSTS:
Posts are to be of four-piece design to form a non-progressive wall system. **Cavity of posts will allow use of approved steel electrical boxes that are now required by building codes.** Posts shall also act as raceways for phone lines, data lines, and other electrical lines. The structural elements of the posts shall be connected by machine bolts and nuts no more than 18" center line. All extrusions shall be 6063-T5 aluminum, minimum .062 thickness, with a clear anodized finish.

CORNER POSTS:
Corner posts will be 3" x 3" Steel Tube welded to Structural Steel Channel base frame.

BASE CHANNEL:
Base channel provides support for wall panels and posts while allowing space for anchors or post uplift connectors. Its low profile design is aesthetically pleasing and eliminates the need for additional base molding. Material shall be 6063-T5 aluminum, minimum .062 thick, and clear anodized finish.

CAPPING CHANNEL:
Capping channel acts as a support for vertical deck loads in addition to serving as a continuous diaphragm member. Material is 6063-T5 aluminum, minimum .062 thickness, and clear anodized finish.

DOORS:
Doors will be 1 3/4" thick and **standard 42" wide** by 80" tall to accommodate equipment or furniture. Door material will match wall panels and be framed in an aluminum channel for heavy traffic areas. Door jamb is a heavy duty extrusion. All doors are factory prehung with hinges and door lockset. Windows are 2 'x 2' with 1/4" tempered safety glass. Extrusions are 6063-T5 aluminum, minimum .062 thickness, with clear anodized finish.

WINDOWS:
Standard fixed windows are 44" wide by 40" tall with 3/16" tempered safety glass installed in aluminum frame. Window units are completely modular. Horizontal sliding and pass thru windows can also be provided. Frames are 6063-T5 aluminum, .062 minimum thickness, with clear anodized finish.

ROOF SYSTEM:
Standard Panelized Gable Roof with 3 in 12 slope, panels are steel faced with foam core.   Optional: Rubber Roofiing and Formed Metal Roof systems.

CEILING SYSTEM:
Optional heavy duty white enameled steel T-BAR hung from roof by 12 ga. galvanized ceiling wire and self tapping sheet metal screws. Ceiling tiles are 2' x 4', 5/8" thick, Mineralboard. Additional R-19 insulation is optional.

FLOOR:
Standard 1 1/2", 22 GA. galvanized decking, 1 1/8" T & G Plywood with 12" x 12" x 1/8" vinyl tile. Optional Steel or Aluminum Diamond Plate or carpet
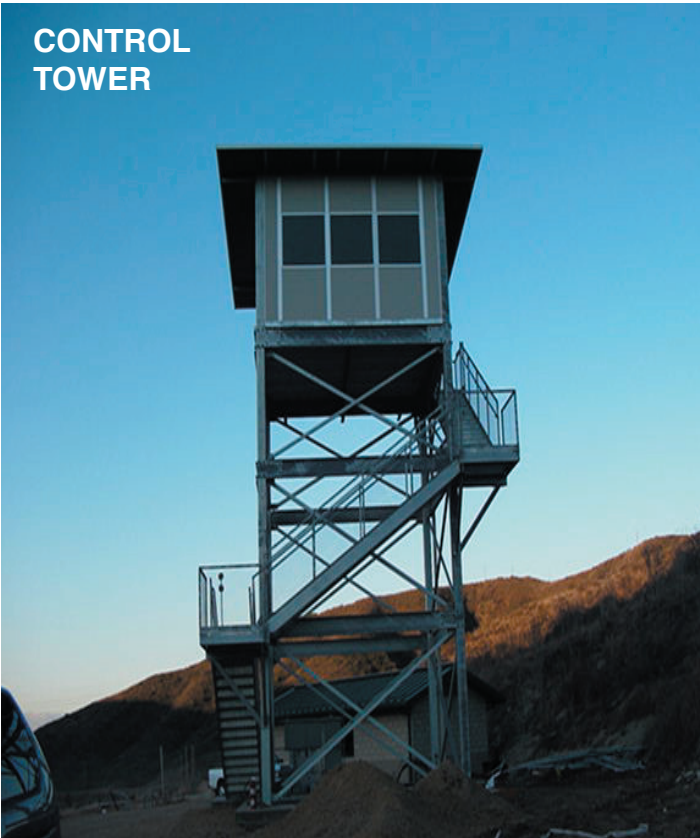
ELECTRICAL:
Surface Mount Fluorescent light fixtures are 2' X 4', 4-TUBE, 120v, less tubes. Duplex outlets and light switches, 120v, with approved electrical box and post prep. Sub panel and breakers.

HVAC:
Thru wall systems or central air systems are available. Consult factory for design assistance.

Specifications are subject to change without notice.

CONTROL TOWER

- **STAIR TOWERS**
- **CONTROL TOWERS**
- **VISION TOWERS**
- **EQUIPMENT TOWERS**
- **CRANE LIFTABLE**
- **MODULAR DESIGN**
- **RELOCATABLE**
- **INSTALLATION OPTION**
- **DESIGN AND ENGINEERING**
- **CUSTOM DESIGNS**
- **HIGH DURABILITY**

CRANE LIFTABLE STAIR TOWER

The Abtech Tower Systems are, Modular Steel Structures that can be custom designed and engineered for a variety of uses. Common designs include: Stair Towers; Control Towers; Equipment Towers; Equipment Platforms; etc. These structures can be designed to be crane liftable or fixed to a foundation. Our Modular design easily allows for easy assembly at jobsite. Some structures can be pre-assembled at factory and shipped complete. Systems can be Structurally engineered to meet different seismic zones and existing conditions. All steel components can be Painted or Hot Dip Galvanized. Optional Modular Walls, Wire Mesh Fence, Gates, Handrail, Stairs, Ladders, Lighting and Electrical packages are also available. Installation by end user or Factory Trained Installers.

![Abtech, Inc. logo]

CRANELIFTABLE BROW

The Abtech Brow Systems are, Steel or Aluminum Structures that can be custom designed and engineered for a variety of uses. Common designs include: Brows; Walkways; Catwalks; Small Span Bridges; etc. These structures can be designed to be crane liftable or fixed to a foundation. Our Modular design easily allows for easy assembly at jobsite. Most structures can be pre-assembled at factory and shipped complete. Systems can be Structurally engineered to meet local design conditions. All steel components can be Painted or Hot Dip Galvanized. Installation by end user or Factory Trained Installers.

- **BROWS**
- **WALKWAYS**
- **CATWALKS**
- **SMALL SPAN BRIDGES**
- **CRANE LIFTABLE**
- **MODULAR DESIGN**
- **STEEL OR ALUMINUM**
- **INSTALLATION OPTION**
- **DESIGN AND ENGINEERING**
- **CUSTOM DESIGNS**
- **HIGH DURABILITY**

TECHNICAL ASSISTANCE

Abtech's engineering, design and technical staff are always avaliable and willing to answer your questions about products and project applications. We gladly respond to all inquiries before and after a project has been completed.

SPECIAL PACKAGING

Prices listed do not include costs of special packaging or crating that may be required for specific projects. Any additional packaging charges will be indicated on quotations.

CLEANROOM PACKAGING AVALIABLE

Abtech, Inc. has cleanroom facilities where we can provide the final cleaning and packaging for any product we manufacture. Prices vary by product. Call us for details.

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SPECIFICATIONS

All specifications shown in this catalogue are based upon the latest data compiled by Abtech and are believed to be correct at the time of publication. In view of constant design changes and improvements in production techniques, however, specifications are subject to change without prior notice.

TERMS OF PAYMENT

STANDARD ORDERS: Prices shown are due and payable 30 days from the date of the invoice (on approved credit).
CUSTOM ORDERS: Prices for custom order goods, as specifically quoted, are payable: 50% of price at time of placement of order, and 50% upon delivery, on approved credit. Contact Abtech for further details. These terms are subject to change without notice.

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Abtech, Inc. will provide formal quotations for custom orders based on detailed drawings and specifications provided by the customer. Delivery date estimates will not be provided until recipt of required initial payment and customer's approval of drawings. Custom orders are final and cannot be cancelled, except upon written approval by Abtech, Inc., and upon payment of all costs incurred by Abtech for the custom order.

INSTALLATION AND ASSEMBLY

Prices do not include installation or assembly. Customer masy contact Abtech for pricing on custom installation and/or assembly of products.

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EXPRESSED WARRANTY

Abtech warrants, for a period of 12 months from the date of shipment that its products: (1) are free from defects in material and workmanship; and (2) have the capacities and ratings set forth in the Abtech's published catalog(s) and bulletins on the date of order. No warranty is made against damage(s) which is the result of corrosion, erosion or deterioration, the result of abuse, misuse, failure to use adequate care or failure to perform preventative mantenance procedures as set out in Abtech's specifications and literature.

Abtech's obligations and liabilities under this warranty are expressly limited to furnishing replacement product/equimpemt (f.o.b. Santa Ana, CA, or other Abtech designated shipping point), or at the sole option of Abech, to the reimbursement of the purchase price paid for any non-conforming product which has been returned to the manufacturer. These remedies are the customer's sole and exclusive remedies for any claim of breach of warranty. Abtech, Inc. shall not be obligated to pay for the cost of labor, assembly or disassembly of any non-conforming product or for lost refrigerant.

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LIMITATION OF LIABILITY. In no event shall Abtech's liability to Customer exceed the purchase price paid by Customer to Abtech for the product(s) on which any claim is based.

DAMAGE OR SHORTAGE

Unless otherwise specifically agreed in writing, Customer is responsible for all loss or damage to goods and products in shipment after delivery FOB Santa Ana, CA. Customer accepts goods FOB Santa Ana, CA by receipt of goods by selected carrier/transportation. Customer is advised to inspect goods immediatley upon reciept and shall not accept a damaged package or a short shipment without notifying the carrier of the damege or shortage in writing upon carrier's and customer's copy or the freight bill, bill of lading, or delivery receipt.

In the event of damage, all containers and packaging must be retained for inspection by Abtech. Customer must notify and request an inspection by the carrier upon discovery of concealed damage within 15 days of delivery. Customer shall report the concealed damage to the carrier by phone, or in-person, so long as there is a follow-up by mail. The carrier's representative is required to make the inspection within 48 hours of notification, and will fill out, sign and deliver to the customer an "Inspection Report of Loss or Damage Recovery After Delivery."

IN ALL CASES, SALVAGE MUST BE HELD BY CUSTOMER FOR CARRIER DISPOSITION

POLICY AND PROCEDURE FOR RETURNED GOODS

No item may be returned, without prior authorization from Abtech, Inc. If a return is authorized, to insure proper adjustment, customer is required to provide Abtech, Inc. the following information:
1. Customer's name and address as it appears on the invoice
2. Customer's Purchase Order number
3. Abtech, Inc.'s invoice number and date
4. Abtech, Inc.'s Shipping Order number
5. The quantity, description and catalog number
6. Reason for return

The customer must coordinate with a representative of Abtech, Inc. concerning method of shipment, special labeling or packaging requirements. Returned items may be subject to a restocking charge. Return freight shall be paid by the customer. All "freight collect" returns will be refused.

ITEMS NOT AUTHORIZED FOR RETURN

1. Custom Order Products
2. Items not purchased from Abtech, Inc.
3. Products modified, mutilated, or damaged by improper use, repairs, or application of special identification labels or name plates.

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Any claim, cause of action or action arising from or out of any purchase of Abtech products shall be governed by and according to the laws of the State of California, without regard to its conflict of law provisions. Venue and Jurisdiction for any action arising under or out of Abtech's sale of goods, the manufacture or delivery of such goods, and any claim for any resulting damages, whether in contract, tort, negligence or otherwise, shall be proper only in the Superior Court of the State of California for the County of Orange. In entering into a purchase agreement with Abtech, Customer consents to the subject matter and personal jurisdiction of such court.

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