# DYNAMAX®

## Structural Aluminum Suspension System

DynaMax Structural Aluminum Suspension System

This fully accessible and flexible system allows you to support heavy point loads to provide a solution for various ceiling applications and requirements.

## KEY SELECTION ATTRIBUTES

- Ideal combination of a finished ceiling system with a structural solution
- Easy integration into a conventional grid system using AXTBC clip and DynaMax® boss channels
- Integrates seamlessly with select Armstrong® ceiling panels for a complete ceiling system solution
- Supports up to a 1,200 lb. point load rating using 3/8"–16 threaded rod at 48" × 48" connection points
- Suspension system has continuous threaded boss channel, allowing 3/8"–16 threaded rod to be installed to the suspension system at any location
- Available in 24" × 24", 24" × 48" and 48" × 48" suspension system layouts
- CNC override feature creates a tight fit minimizing air leakage between plenum and occupied space
- Fully accessible system allows for future expansion and upgrades

- Non-progressive installation gives the ability to remove or replace a section of the system without the need to dismantle those components around it
- Cross tees not bearing any load are removable for plenum access without compromising the structural integrity of the system
- 10-Year Limited Warranty; 30-Year Limited System Warranty
- X-Brackets provide attachment points for 48" × 48" suspension from building structure
- Now available with MetalWorks™ ceiling panels
- For custom layout information and technical guidelines, contact TechLine customer support at 877 276-7876

### For Data Center Applications

- Provides a suspension platform or attachment for data center cable trays, equipment, partitions and hot and cold aisle containment barriers
- Finished ceiling system offers a containment barrier to protect servers from debris from building structure to below the ceiling plane
- Controls airflow by eliminating penetrations
- Grid provides increased temperature and pressure management, reduced leakage, and enables the best hot and cold air containment at the ceiling plane when compared to other ceiling types
- Available with Ultima® AirAssure® panels with factory-gasketed edges to provide even greater temperature and pressure management
- Lighting, diffuser, and containment options are available from our Data Center lighting and MEP partners

## TYPICAL APPLICATIONS

- Data Centers
- Laboratories
- Hospitals
- Industrial Warehouses/ Distribution Centers
- Retail/Convenience Store

## COLORS

Standard



White
(WH)

Available in any color!

White is standard color for main beams and cross tees.
All brackets and hardware are unfinished.
Custom colors and finishes are available for main beams, cross tees, perimeter molding, and ceiling panels.
Contact Armstrong Customer Service 877 276-7876

TechLine 877 276-7876
armstrongceilings.com/datacenter

**Armstrong®**
World Industries

# DYNAMAX®

## Structural Aluminum Suspension System

**RECYCLED CONTENT**
UP TO **50%**

SUSTAIN™
High Performance Sustainable Ceiling Systems

Declare.

**LEED** V5

Ecomedes Data

**COMMON MATERIALS FRAMEWORK**

| Human Health | | Climate Health | **EPD** |
|---|---|---|---|
| | **Declare Label** | Ecosystem Health | **EPD** |
| | **HPD** | Circular Economy | ✓ |
| | **3rd Party CDPH** | | |

Well Building Standard™ (WELL)
Living Building Challenge® (LBC)

## VISUAL SELECTION

### PACKAGING

| | Item No. | Description | Dimensions (Inches) L × W × H | PCS/ CTN | LF/ CTN |
|---|---|---|---|---|---|
| DynaMax® Structural Aluminum Data Center Suspension System | DM4301 | Main Beam | 144 × 2 × 2-3/8" | 4 | 48 |
| | DM4320 | 2' Cross Tee | 24 × 2 × 2-3/8" | 12 | 24 |
| | DM4340 | 4' Cross Tee | 48 × 2 × 2-3/8" | 12 | 48 |
| | DM4800 | Perimeter Molding | 144 × 2-1/8 × 2-1/2" | 4 | 48 |
| DynaMax® Structural Aluminum Data Center Suspension System – Factory-Gasketed | DM4301GS | Main Beam | 144 × 2 × 2-3/8" | 4 | 48 |
| | DM4320GS | 2' Cross Tee | 24 × 2 × 2-3/8" | 12 | 24 |
| | DM4340GS | 4' Cross Tee | 48 × 2 × 2-3/8" | 12 | 48 |
| | DM4800GS | Perimeter Molding | 144 × 2-1/8 × 2-1/2" | 4 | 48 |

NOTE: Contact local engineer for job-specific load and/or seismic requirements.
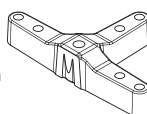
## ACCESSORIES

**DMXB – X-Bracket** Used to connect all cross tees together for rigid connection
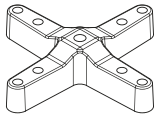
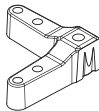**DMXB** – 24 PCS

**DMTB – T-Bracket –** Used to connect main beams and cross tees to the perimeter extrusion
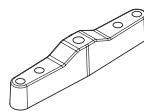
**DMTB** – 36 PCS

**DMLB – L-Bracket –** Used to connect perimeter extrusion corners together
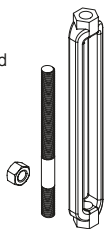
**DMLB** – 12 PCS

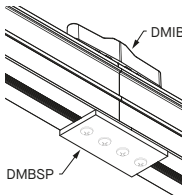**DMIB – I-Bracket –** Used to splice together main beam ends

**DMIB** – 24 PCS

**DMHWK – Hardware Kit –** Turnbuckles and threaded rods are used to connect the X-brackets to the threaded rod to create a structural support for the grid
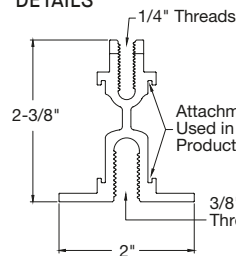
**DMHWK** – 12 PCS

**DMBSP – DynaMax Main Beam Splice Plate –** Used with DMIB I-Bracket to splice together main beams that butt up against one another
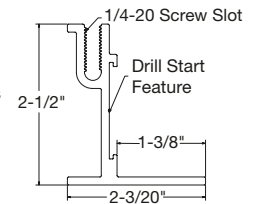
← DMIB

DMBSP →

**DMBSP** – 24 PCS

## OPTIONAL ACCESSORIES

**DMHDC – Hold-down Clip –** Attaches to the suspension system to hold Lay-in panels in place
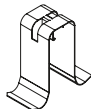
**DMHDC** – 100 PCS

## NON-STRUCTURAL CEILING ADAPTER ACCESSORIES

**AXTBC – Axiom® T-Bar Connector Clip –** Provides positive mechanical lock with factory-installed screw. Screw-fastened connection to suspension members that intersect the trim channel.

**AXTBC** – 1 PC

**AX4SPLICEB – Axiom Splice Plate with Set Screws –** Join straight sections of light cove together

**AX4SPLICEB** – 1 PC

## DETAILS

1/4" Threads
2-3/8"
Attachment Features Used in Axiom® Product Line
3/8" – 16 Threads
2"

DynaMax Main Beam

1/4-20 Screw Slot
Drill Start Feature
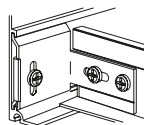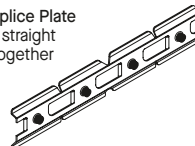2-1/2"
1-3/8"
2-3/20"

DM4800 Perimeter Molding

## LOAD DATA FOR DYNAMAX PLUS SUSPENSION SYSTEMS

| Member Span and Spacing (IN.) | 48" | 60" | 72" |
|---|---|---|---|
| Maximum Allowable Uniform Area Load (LBS/SF) | 75 | 48 | 33.3 |
| Mid-Span Point Load @ L/360 Deflection (LBS) | 320 | 200 | 140 |
| Maximum Static Point Load (LBS) | 1200 | 1200 | 1200 |
| Turnbuckle Maximum Load to Structure (LBS) | 1200 | 1200 | 1200 |

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# DYNAMAX®
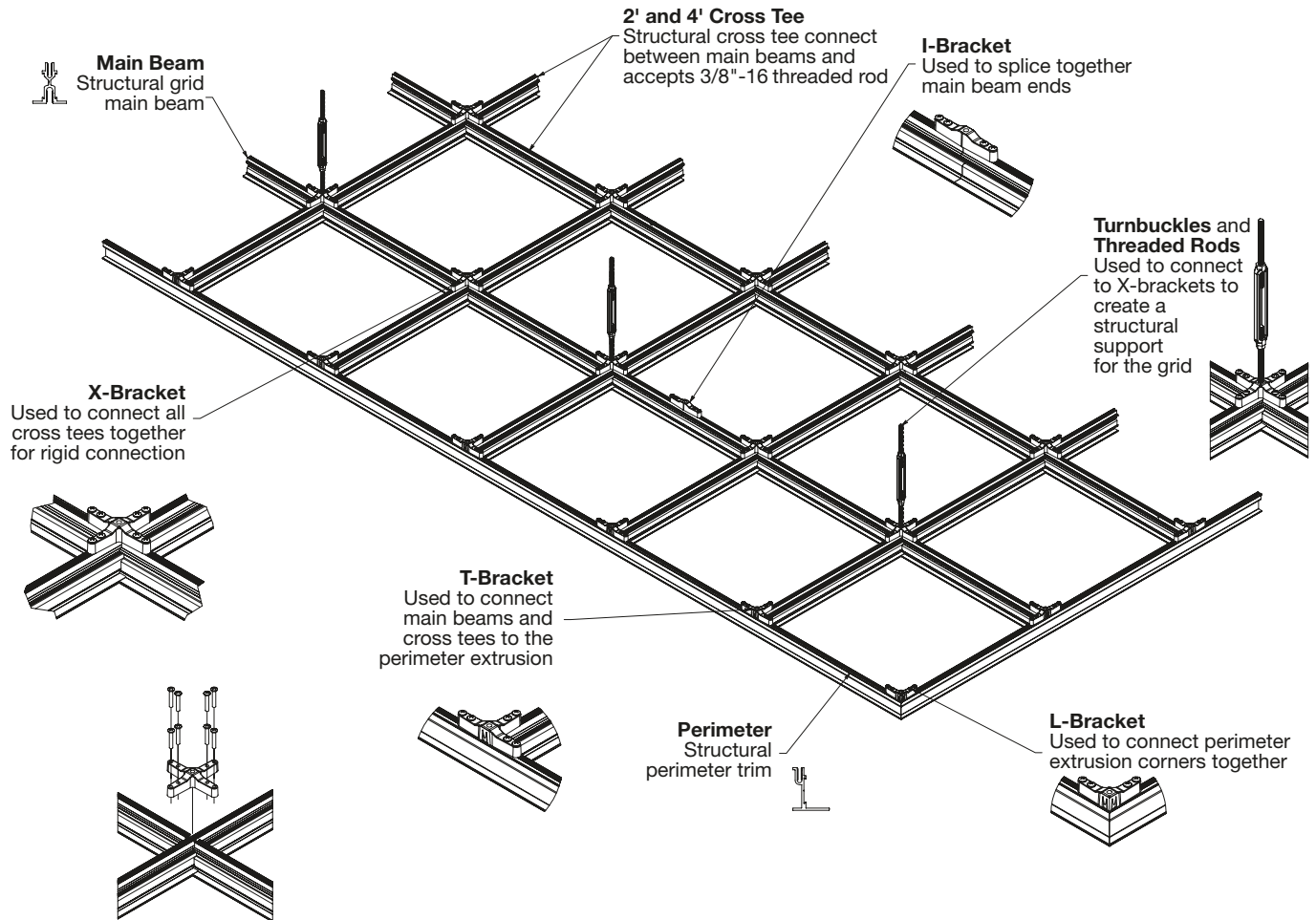## Structural Aluminum Suspension System

**RECYCLED CONTENT**
UP TO **50%**

**SUSTAIN™**
High Performance
Sustainable Ceiling Systems

**Declare.**

**LEED** V5                    Ecomedes Data

**COMMON MATERIALS FRAMEWORK**

| | | |
|---|---|---|
| Human Health | | Climate Health | **EPD** |
| | **Declare Label** | Ecosystem Health | **EPD** |
| | **HPD** | Circular Economy | ✓ |
| | **3rd Party CDPH** | | |

Well Building Standard™ (WELL)
Living Building Challenge® (LBC)

## DYNAMAX® SUSPENSION SYSTEM INSTALLATION OVERVIEW



**Main Beam**
Structural grid main beam

**2' and 4' Cross Tee**
Structural cross tee connect between main beams and accepts 3/8"-16 threaded rod

**I-Bracket**
Used to splice together main beam ends

**Turnbuckles and Threaded Rods**
Used to connect to X-brackets to create a structural support for the grid

**X-Bracket**
Used to connect all cross tees together for rigid connection

**T-Bracket**
Used to connect main beams and cross tees to the perimeter extrusion

**Perimeter**
Structural perimeter trim

**L-Bracket**
Used to connect perimeter extrusion corners together

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# DYNAMAX®
## Structural Aluminum Suspension System

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Ecomedes Data

**COMMON MATERIALS FRAMEWORK**

| | | | |
|---|---|---|---|
| Human Health | Declare Label | Climate Health | EPD |
| | HPD | Ecosystem Health | EPD |
| | 3rd Party CDPH | Circular Economy | ✓ |

Well Building Standard™ (WELL)
Living Building Challenge® (LBC)

**LIGHTING PARTNERS**  Lighting and diffuser solutions are available through partner companies.
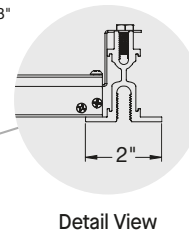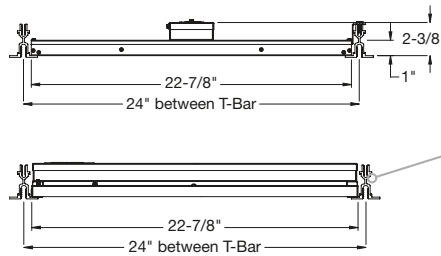
## axis

For compatible lighting details, visit axislighting.com

TRAYFIT™ 2' × 2'

TRAYFIT™ 2' × 4'

2-3/8"
1"
22-7/8"
24" between T-Bar

2-3/8"
1"
22-7/8"
24" between T-Bar

22-7/8"
24" between T-Bar

2"
Detail View

46-7/8"
48" between T-Bar

## Williams®
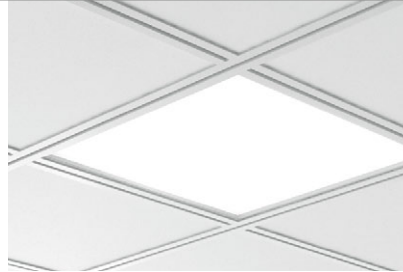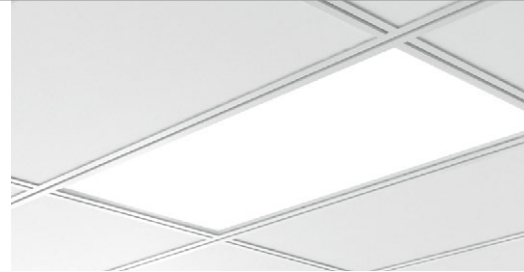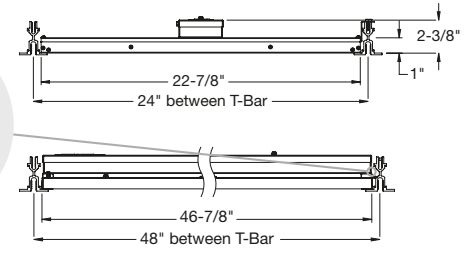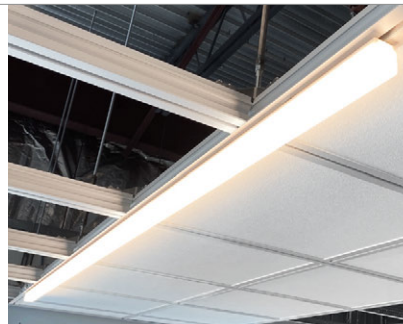
For compatible lighting details, visit hew.com/products/PTDC

PTDC – Shallow Plenum LED Troffer for DynaMax® System

46-7/8"
22-7/8"
46-13/16"
23-13/16"

22-7/8"
22ga CRS End Plate and Housing
22ga CRS Reflector
LED Boards
2-3/8"
2-3/10"
Frosted Acrylic Lens
Armstrong® DynaMax Grid
23-27/200"
Inside of Grid
23-13/16"
Center of T-Bar System
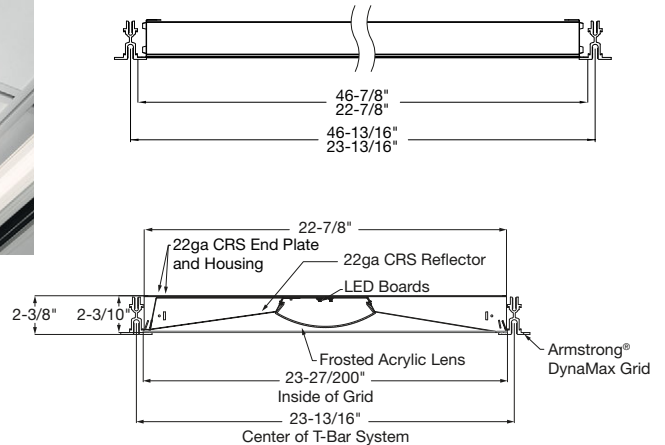
## vode®

For compatible lighting details, visit vode.com/dynamax

ZipTwo® Data Center Solutions

Notch T-Bar / Tile for fixture lead if necessary
Mounting Surface

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# DYNAMAX®

## Structural Aluminum Suspension System

## LIGHTING PARTNERS (CONTINUED)

### JLC · tech

For compatible lighting details, visit jlc-tech.com

Junction Box with Integral Driver

DynaMax® Grid System

TERALyte™ 2"

4"

All Heavy Hex Nuts 3/8"

LED wires

TERALyte™ 2"

OR
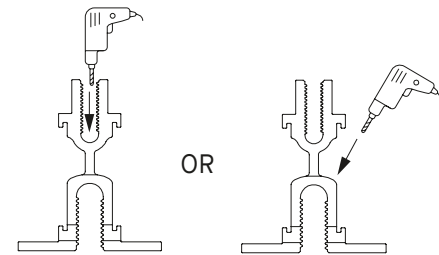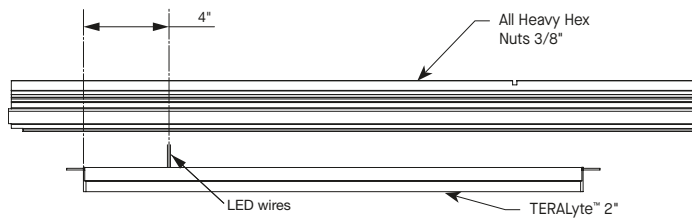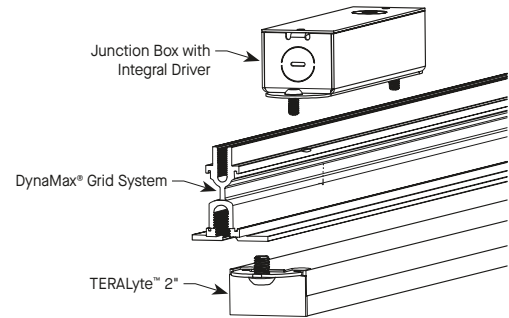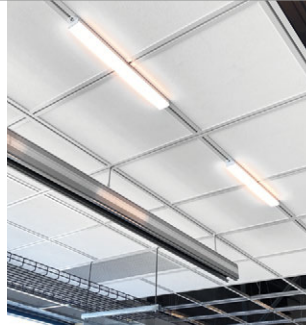
## MEP PARTNER

### price®

For compatible diffuser details, visit priceindustries.com/diffusers

1/4"

22" Exposed Opening
22-11/16" Price Diffuser
23-1/8" Tile Opening
24" O.C.

1/4"

46" Exposed Opening
46-11/16" Price Diffuser
47-1/8" Tile Opening
48" O.C.
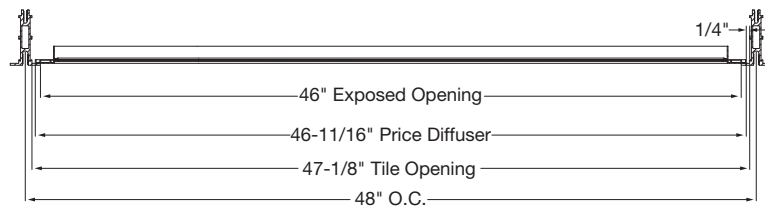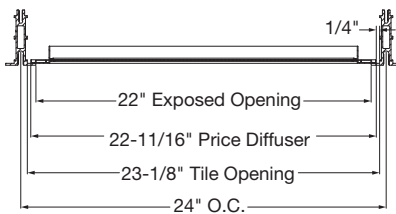
Eggcrate Air Device – Price® Model 80

Perforated Air Device – Price® Model 10

Eggcrate Air Device – Price® Model 80

Perforated Air Device – Price® Model 10

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SUSPENSION SYSTEMS – DATA CENTERS

# DYNAMAX®

## Structural Aluminum Suspension System

## TEMPERATURE AND PRESSURE CONTROL ADVANTAGES
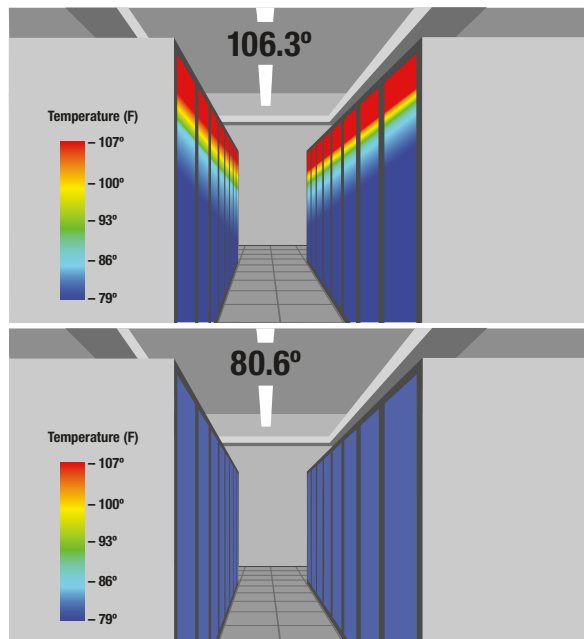


DynaMax structural grid systems provide increased pressure management, reduced leakage, and enables the best hot and cold air containment at the ceiling plane when compared to other ceiling types.
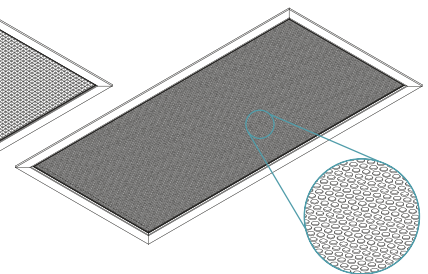
Unlike drilled hole or slotted strut ceilings, the integration of DynaMax grid and Armstrong® Ceiling Panels keeps ceiling planes closed for improved pressure and temperature control where it matters most, such as data center halls.

A 2021 Computational Fluid Dynamics (CFD) simulation showed that, on average, the top of data center cabinet equipment is approx. 26°F warmer when a slotted strut ceiling (top left) is in place and approx. 6°F warmer with drilled hole ceiling (not shown) than with the DynaMax structural grid systems (bottom left).

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RECYCLED CONTENT
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LEED V5

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COMMON MATERIALS FRAMEWORK

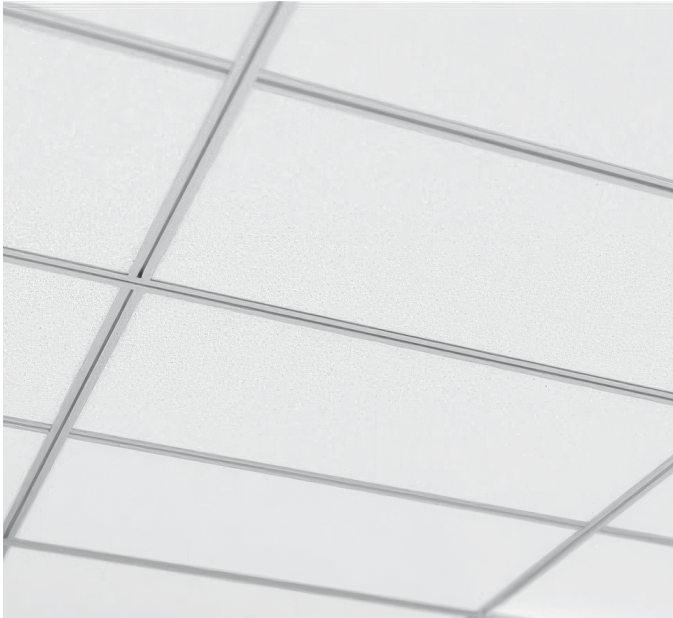| Human Health | Declare Label | Climate Health | EPD |
| | HPD | Ecosystem Health | EPD |
| | 3rd Party CDPH | Circular Economy | ✓ |
| OCCUPANT EXPERIENCE | | Acoustics | ✓ |

SUSTAIN®
High Performance
Sustainable Ceiling Systems

Declare.

# Ceiling Panels for DYNAMAX®

## Square Lay-in

Ceiling panels for DynaMax are specifically designed for performance, reliability, and sustainability in data center and critical application environments.

## KEY SELECTION ATTRIBUTES

### DataZone™ and Ultima® AirAssure® for DynaMax®

- DataZone and Ultima AirAssure panels are part of the Sustain® portfolio, and meet the most stringent industry sustainability compliance standards today
- Get total noise control and floor plan versatility with Total Acoustics® ceiling panels: NRC + CAC = Total Acoustics performance
- Smooth, clean, durable finish – Washable, Impact-resistant, scratch-resistant, and soil-resistant
- Mold- and mildew-resistant surface
- 30-Year Limited System Warranty against visible sag, mold, and mildew
- Made in the U.S.A. of domestic and global content
- Build America, Buy America (BABA) Act compliant

### Ultima® AirAssure® for DynaMax®

- Factory gasketed Ultima® AirAssure® panels for DynaMax®, DynaMax® LT, and DynaMax® Plus grid reduces air leakage and contributes to annual energy savings
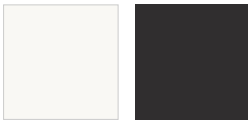
### MetalWorks™ for DynaMax®

- CleanAssure™ family of products – includes disinfectable panels, suspension systems, and trim
- Perforated panel option available to enhance acoustical performance and design aesthetics
- Outstanding NRC with acoustical fleece or infill panel (0.70 – 0.85)
- Provides additional options when bidding data centers and structural applications
- Factory-fit ceiling panels eliminate the need to field modify panels in all standard suspension layouts

Ceiling panels are specially sized and engineered for the DynaMax® suspension systems and must be used with these systems. These panels do not fit in other suspension systems.

DataZone™ panels with DynaMax® suspension system

## COLORS
Due to printing limitations, shade may vary from actual product.

### Painted

**DataZone™ for DynaMax®**

White (WH)

Black (BK)

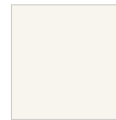**Ultima® AirAssure® for DynaMax®**

White (WH)

**MetalWorks™ for DynaMax®**
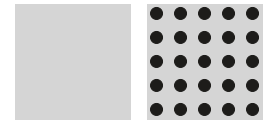
Whitelume (WHA)

Custom Colors Available*

For custom options contact ASQuote, ASQuote@armstrongceilings.com

* MetalWorks color options

## PERFORATION OPTIONS
(1:2 scale shown)

**MetalWorks only**

M1 (Unperforated)

M19

## DETAILS

1. DataZone™ for DynaMax®
2. Ultima® AirAssure® for DynaMax®
3. MetalWorks™ for DynaMax®

# Ceiling Panels for DYNAMAX®
## Square Lay-in

**SUSTAIN®**
High Performance
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**RECYCLED CONTENT**
UP TO **87%**

**LEED V5**

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**COMMON MATERIALS FRAMEWORK**

| Human Health | | Climate Health | EPD |
|---|---|---|---|
| | Declare Label | Ecosystem Health | EPD |
| | HPD | Circular Economy | ✓ |
| | 3rd Party CDPH | | |

**OCCUPANT EXPERIENCE**

| Acoustics | ✓ |
|---|---|

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## VISUAL SELECTION

## PERFORMANCE  Dots represent high level of performance.

| Edge Profile | | Item No. | Dimensions (Inches) | Sound Absorption NRC | + Sound Blocking CAC | = Total Acoustics[1] NRC & CAC | Fire Performance | Light Reflect* | Bio-Block Mold & Mildew Protection | Humi-Guard+ Sag Resistant | Certified Low VOC Emissions | Durability | Recycled Content | Recycle Program | 30-Yr Warranty |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DataZone™ for DYNAMAX® Square Lay-in | new | 1508 | 23-1/4 × 23-1/4 × 3/4" | 0.75 | 35 | BETTER | Class A | 0.82 | • | • | • | Std | • | • | • |
| | new | 1508BK | 23-1/4 × 23-1/4 × 3/4" | 0.75 | 35 | BETTER | Class A | N/A | • | • | • | Std | • | • | • |
| | new | 1509 | 23-1/4 × 47-1/4 × 3/4" | 0.75 | 35 | BETTER | Class A | 0.82 | • | • | • | Std | • | • | • |
| | new | 1509BK | 23-1/4 × 47-1/4 × 3/4" | 0.75 | 35 | BETTER | Class A | N/A | • | • | • | Std | • | • | • |
| | new | 1566 | 23-1/4 × 23-1/4 × 3/4" | 0.90 | N/A | N/A | Class A | 0.82 | • | • | • | Std | • | • | • |
| | new | 1566BK | 23-1/4 × 23-1/4 × 3/4" | 0.90 | N/A | N/A | Class A | N/A | • | • | • | Std | • | • | • |
| | new | 1567 | 23-1/4 × 47-1/4 × 3/4" | 0.90 | N/A | N/A | Class A | 0.82 | • | • | • | Std | • | • | • |
| | new | 1567BK | 23-1/4 × 47-1/4 × 3/4" | 0.90 | N/A | N/A | Class A | N/A | • | • | • | Std | • | • | • |
| | new | 1568 | 47-1/4 × 47-1/4 × 1" | 0.90 | N/A | N/A | Class A | 0.82 | • | • | • | Std | • | • | • |
| ULTIMA® AirAssure® for DYNAMAX Square Lay-in | | 1599 | 23-1/4 × 23-1/4 × 3/4" | 0.75 | 35 | BETTER | Class A | 0.88 • | • | • | • | Std | • | • | • |
| | | 1638 | 23-1/4 × 47-1/4 × 3/4" | 0.75 | 35 | BETTER | Class A | 0.88 • | • | • | • | Std | • | • | • |
| METALWORKS™ for DYNAMAX® Square Lay-in | M1 (Unperforated) | 6345W24L48M1WHA | 23" × 47" | N/A | N/A | N/A | Class A | 0.75 | • | N/A | • | • | N/A | N/A | N/A |
| | | 6345W48L48M1WHA | 47" × 47" | N/A | N/A | N/A | Class A | 0.75 | • | N/A | • | • | N/A | N/A | N/A |
| | M19 | 6345W24L48M19WHA | 23" × 47" | See chart below for acoustical information. | | | Class A | 0.75 | • | N/A | • | • | N/A | N/A | N/A |
| | | 6345W48L48M19WHA | 47" × 47" | | | | Class A | 0.75 | • | N/A | • | • | N/A | N/A | N/A |

Ceiling panels are specially sized and engineered for DynaMax suspension systems and must be used with the systems. These panels do not fit in other suspension systems.

* Advertised values for light reflectance are applicable to white tiles only.

[1] Total Acoustics® ceiling panels have an ideal combination of sound absorption and sound blocking in one product.
  **GOOD** (NRC 0.60-0.65; CAC 35+)  **BETTER** (NRC 0.70-0.75; CAC 35+)  **BEST** (NRC 0.80+; CAC 35+)

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## ACCESSORIES FOR METALWORKS LAY-IN CEILING PANELS

**6483 – MetalWorks Lay-in Perimeter Hold-down Clip for DynaMax –**
Screw attaches to perimeter molding to hold thevperimeter cut metalworks panels in place. Two clips required per cut panel.
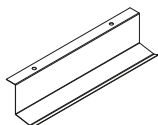
6483 – 10 PCS

**8200T10 – 1" Fiberglass Infill Bag –** 24 × 24 × 1"
Color – Black (gloss)

8200T10 – 12 PCS

## METALWORKS ACOUSTICAL INFORMATION

| | Item No. | NRC with Acoustical Fleece | NRC with 1" Fiberglass Infill |
|---|---|---|---|
| M19 | 6345W24L48M19WHA | 0.70 | 0.85 |
| | 6345W48L48M19WHA | 0.70 | 0.85 |

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SUSPENSION SYSTEMS – DATA CENTERS

TechLine 877 276-7876

armstrongceilings.com/datacenter

**Armstrong®**
World Industries

# DYNAMAX®
## Structural Aluminum Suspension System

SUSTAIN™
High Performance
Sustainable Ceiling Systems

Declare.

| Human Health | Climate Health | EPD |
| --- | --- | --- |
| **Declare Label** | Ecosystem Health | EPD |
| **HPD** | Circular Economy | ✓ |
| **3ʳᵈ Party CDPH** | | |

Well Building Standard™ (WELL)
Living Building Challenge® (LBC)



DynaMax® with MetalWorks™ Lay-in Panels in Whitelume

## PHYSICAL DATA FOR DYNAMAX® SUSPENSION SYSTEMS

**Material**
Aluminum

**Surface Finish**
Baked polyester paint or powder-coated

Manufactured and tested in accordance
with ASTM C635 and E3090

**Face Dimension**
2"

**Profile**
Exposed tee

**Cross Tee/Main Beam Interface**
Override

**End Detail**
Main Beam: Butt cut
Cross Tee: Override

**Duty Classification**
Heavy-duty

**System Weight**
2' × 2' – 1.25 LBS/SF
2' × 4' – 0.94 LBS/SF

## PHYSICAL DATA FOR METALWORKS LAY-IN CEILING PANELS

**Design Considerations**
MetalWorks panels and DynaMax and DynaMax Plus grid
are manufactured at separate facilities that use different
paint systems. Colors i.e. White and Whitelume will
coordinate but are not exact color matches.

**Material**
All MetalWorks panels: Aluminum – 0.064"

**Warranty**
One (1) year limited warranty for MetalWorks items.
Details at armstrongceilings.com/warranty

## PHYSICAL DATA FOR DATAZONE™ AND ULTIMA® AIRASSURE® CEILING PANELS

**Material**
Wet-formed mineral fiber with DuraBrite® acoustically
transparent membrane and polyethylene foam
(Items 1599 and 1638)

Wet-formed mineral fiber with acoustically transparent
membrane (Items 1508, 1508BK, 1509, and 1509BK)

Fiberglass with DuraBrite® acoustically transparent
membrane (Items 1566, 1566BK, 1567, 1567BK, and 1568)

**Surface Finish**
Acoustically transparent membrane with
factory-applied latex paint

DuraBrite scrim with factory-applied latex paint
(Items 1599, 1638, 1566, 1566BK, 1567, 1567BK, and 1568)

**Fire Performance**
Class A: ASTM E84 and CAN/ULC S102 surface burning
characteristics. Flame Spread Index of 25 or less. Smoke
Developed Index of 50 or less (UL® labeled).

**ASTM E1264 Classification**
Type A, Form A2.2, Pattern E; Fire Class A
(Items 1599 and 1638)

Type A, Form A2.2, Pattern G; Fire Class A
(Items 1508, 1508BK, 1509, and 1509BK)

Type B, Form B2, Pattern G; Fire Class A
(Items 1566, 1566BK, 1567, 1567BK, and 1568)

**Humidity/Sag Resistance**
HumiGuard® Plus ceiling panels are recommended for areas
subject to high humidity, up to, but not including, standing
water and outdoor applications.

**Anti-Mold/Mildew**
Ceiling tiles with BioBlock® performance resist the growth of
mold and mildew on the tile surface.

**VOC Emissions**
Third-party certified compliant with California Department of
Public Health CDPH/EHLB/Standard Method Version 1.2, 2017.
This standard is the guideline for low emissions in LEED®, WELL
Building Standard™, Living Building Challenge® (LBC), CalGreen
Title 24, ANSI/ASHRAE/USGBC/IES Standard 189; ANSI/GBI
Green Building Assessment Protocol.

**High Recycled Content**
Contains greater than 50% total recycled content. Total recycled
content based on product composition of post-consumer and
pre-consumer (post-industrial) recycled content per FTC.

**Insulation Value**
1508, 1508BK, 1509, 1509BK, 1599, and 1638:
R Factor – 2.2 (BTU units); R Factor – 0.39 (Watts units)

1566, 1566BK, 1567, 1567BK, and 1568:
R Factor – 4.0 (BTU units); R Factor – 0.7 (Watts units)

**30-Year Performance Guarantee & Warranty**
When installed with Armstrong® Suspension System.
Details at armstrongceilings.com/warranty

**Weight; Square Feet/Carton**
1508, 1508BK, 1509, 1509BK – 1.08 LBS/SF; 48 SF/CTN
1566 – 0.44 LBS/SF; 90.09 SF/CTN
1566BK – 0.44 LBS/SF; 45.05 SF/CTN
1567, 1567BK – 0.44 LBS/SF; 91.55 SF/CTN
1568 – 0.44 LBS/SF; 0.44 LBS/SF; 93 SF/CTN
1599 – 1.08 LBS/SF; 12 PCS/CTN; 44 SF/CTN
1638 – 1.08 LBS/SF; 6 PCS/CTN; 44 SF/CTN

**Minimum Order Quantity**
1 carton

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