PRELUDE® XL®
MAX™
SUSPENSION SYSTEM
TECHNICAL GUIDE
DATA CENTER CEILING SOLUTIONS

Inspiring Great Spaces®
The Prelude® XL® Max™ suspension system for data center applications is a pre-engineered ceiling suspension system designed for improved air flow management, load carrying capacity, and adaptability in data centers of all sizes.

The Prelude XL Max suspension system uses 3/8 inch threaded rod support and reconfigurable load connector clips to support cable trays, bus bars, hot aisle containment, and other components to provide maximum load carrying capacity and flexibility, while eliminating the need for a separate strut channel suspension system.

**Code Compliance You Can Trust**

Suspension system meets:
- ASTM C635
- ASTM C636
- ASTM E580
- ICC-ES AC156

Seismic D, E, F configurations available

**Key Selection Attributes**

- **Prelude XL Max 15/16" Suspension System**
  - Supports load from the face utilizing 3/8" threaded rod and integrated hanging clips to provide:
  - Allows for flexible and reconfigurable overhead cable trays, electrical distribution, and hot aisle containment to meet client needs without a separate strut channel system.
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Code Compliance</td>
</tr>
<tr>
<td>4</td>
<td>How the System Works</td>
</tr>
<tr>
<td>5</td>
<td>Suspension System Components</td>
</tr>
<tr>
<td>6</td>
<td>Recommended Ceiling Panels</td>
</tr>
<tr>
<td>7</td>
<td>Installation Overview and Hardware</td>
</tr>
<tr>
<td>8</td>
<td>Installation/Layout Overview and Seismic Data</td>
</tr>
<tr>
<td>9</td>
<td>Point Load Data – Center and Mid Point</td>
</tr>
<tr>
<td>10</td>
<td>Point Load Data – Single and Dual Point Connection and Seismic Data</td>
</tr>
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</table>
**How the System Works**

For additional information and technical guidelines, contact TechLine at 1 877 276-7876 and select prompts 1-2-3.

PMLC – Prelude® XL® Max™
Load Connector
Used to support bus bars, cable trays, hot aisle containment and other components with 3/8” threaded rod along the suspension system face

PMHC – Prelude Max Hanging Clip
Used to carry the system with 3/8” threaded rod along the main and at intersections over the IJC

IJC – Intersection Joint Clip
Used to connect all cross tees together for rigid connection

PMHC – Prelude Max Hanging Clip
Used for carrying the ceiling system with 3/8” threaded rod from any location along the main beam to any location along the main beam cross tee intersection.

IHC – Intersection Hanging Clip
Used to connect all cross tees together for a secure connection.

*Must be within 6” of a PMHC

Prelude XL Max Main Beams and Cross Tees
15/16” face double bulb suspension system provides maximum load carrying capacity and Seismic D, E, F performance

TLMBS – Top Lock Main Beam Splice Clip
Locks two main beams together for a secure connection.

All Heavy Hex 3/8” Nuts

3/8” threaded rod to structure (4’ O.C. or as required)

IHC Clip

#8 x 1/2” long Truss Head Sharp Point Screw

3/8–16” Threaded Rod

3/8–16” Heavy Hex Nut

3/8–16” Heavy Hex Locknut

IHC – Intersection Hanging Clip Installation
Make sure that the head of the rivet goes through the XL clip. The expanded portion of the rivet needs to expand on the IHC clip.

Blind Steel Pop Rivets 1/8” Dia. x .337” Long .126” – .186” Grip Range Shear Strength: 260 lbs.

(4) #8 x 1/2” Long Sharp Point Truss Head Screws
Top Lock Main Beam Splice Clip Installation on two Prelude XL Max Main Beams

SHC – Supplemental Hanging Clip

SHC Clip

3/8–16” Threaded Rod

3/8–16” Heavy Hex Nut

3/8–16” Heavy Hex Locknut

SHC – Supplemental Hanging Clip Installation

For additional information and technical guidelines, contact TechLine at 1 877 276-7876 and select prompts 1-2-3.
KEY SELECTION ATTRIBUTES

Prelude XL Max 15/16” Suspension System

- 2’ x 2’ and 2’ x 4’ suspension system supports point loads up to 300 lbs. using 3/8” threaded rod and integrated hanging clips to provide:
  - Flexible and reconfigurable overhead cable tray and electrical distribution to meet client needs without a separate strut channel system
  - Eliminates unsightly threaded rod penetrations through the ceiling plane for improved access and aesthetics
  - Reduced ceiling penetrations help minimize unwanted air infiltration

- Suspension system meets ASTM C635, ASTM C636, ASTM E580, ICC-ES AC156 with Seismic D, E, F available

- Factory applied gasket option available

- 30-Year Limited System Warranty

- Standard 2’ x 2’ and 2’ x 4’ grid layouts allow for use of standard size lighting and ceiling tile options

TYPICAL APPLICATIONS

- Data Centers
- Laboratories
- Hospitals

The ceiling panels are designed and engineered, and must be used with Prelude® XL® Max™. These panels do not fit in other suspension systems.

VISUAL SELECTION

<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Prelude XL Max</td>
<td>15/16”</td>
<td>12' HD Main Beam</td>
<td>144 x 15/16 x 2.44”</td>
<td>40.17</td>
<td>135.5</td>
<td>–</td>
<td>10</td>
<td>120</td>
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<tr>
<td>✔️ 730145</td>
<td>15/16”</td>
<td>4’ Cross Tee</td>
<td>48 x 15/16 x 2.44”</td>
<td>40.17</td>
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<td>–</td>
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<td>120</td>
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<td>✔️ XL7345</td>
<td>15/16”</td>
<td>2’ Cross Tee</td>
<td>24 x 15/16 x 2.44”</td>
<td>–</td>
<td>93.82</td>
<td>–</td>
<td>30</td>
<td>60</td>
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<tr>
<td>Molding</td>
<td>7/8”</td>
<td>12’ Structural Wall Angle</td>
<td>144 x 7/8 x 7/8”</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>12</td>
</tr>
</tbody>
</table>

*Simple Span

ACCESSORIES

PMHC – Prelude Max Hanging Clip – Used to carry the ceiling system with 3/8” threaded rod from structure.
* Machine screws, Heavy Hex Nut, and Locknut included
  ✔️ PMHC – 150 pcs
  ✔️ FHPXMHC – 50 pcs

PMLC – Prelude XL Max Load Connector – Used to support bus bars, cable trays, hot aisle containment, and other components with 3/8” threaded rod from the suspension system face.
* Heavy hex nuts and locknut included
  ✔️ PMLC – 100 pcs
  ✔️ F2PMLC – 50 pcs

UJC – Intersection Joint Clip – Used at all cross tee-to-cross tee and main beam-to-cross tee connections.
* Machine screws included
  ✔️ UJC – 250 pcs
  ✔️ F2UJC – 50 pcs

XTAC – Cross Tee Adapter Clip – Securely attaches cross tees or main beams to the structural wall molding around the perimeter of the ceiling installation.

TLMBs – Top Top Main Beam Splice Clip – Locks two main beams together for a secure connection.
  ✔️ TLMBs – 50 pcs

PMHDC – Maximum Hold Down Clip – Attaches to the top plug of the Prelude XL Max suspension system to hold ceiling panels in place; helps to prevent ceiling panel movement.

LSB – Lateral Support Bar
* Seismic Zone DEF Only
  ✔️ LSB12HRC – 10 pcs/120 LF
  ✔️ LSB10HRC – 10 pcs/100 LF
  ✔️ LSB8HRC – 10 pcs/80 LF

For custom layout information and technical guidelines, contact TechLine™ customer support at 1 877 276-7876.
**OPTIMA®**

- Optima® PB panels are part of the Sustain® portfolio, and meet the most stringent sustainability compliance standards today.
- Smooth, clean, durable finish – Washable, Impact-resistant, Scratch-resistant, Soil-resistant.
- Items with PB suffix are manufactured with a plant-based binder.
- Outstanding acoustical performance for open plan areas, both Articulation Class (180-200) and NRC (0.90-1.00).
- Energy-saving high light-reflective finish.

**CLEAN ROOM™ FL**

- Clean Rooms up to ISO Class 5 (Class 100).
- Durable – Washable, Scrubbable, Soil-resistant.
- Non-directional visual reduces installation time and scrap.
- 30-Year Limited System Warranty against visible sag, mold, and mildew.
- Clean Rooms up to ISO Class 5 (Class 100).
- Durable – Washable, Scrubbable, Soil-resistant.
- Non-directional visual reduces installation time and scrap.
- 30-Year Limited System Warranty against visible sag, mold, and mildew.

**ULTIMA®**

- Get total noise control and floor plan versatility with Total Acoustics® ceiling panels: NRC + CAC = Total Acoustics Performance™
- Ultima® panels are part of the Sustain® portfolio, and meet the most stringent sustainability compliance standards today.
- Smooth, clean, durable finish – Washable, Impact-resistant, Scratch-resistant, Soil-resistant.
- Ceiling-2-Ceiling™ Post-consumer Recycled Content options: items 1910HRC, 1913HRC. 71% Pre-consumer; 15% Post-consumer.

*These panels are specially sized and engineered for Prelude® XL® Max™ and must be used with the system. These panels do not fit in other suspension systems.*

**VISUAL SELECTION**

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<tr>
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<th>Dimensions Nominal (Inches)</th>
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<td>Fine Fissured</td>
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<td></td>
<td>1488</td>
<td>Canyon</td>
<td>23.5 x 23.5 x 5/8&quot;</td>
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<td>1489</td>
<td>Canyon</td>
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<td>Ultima</td>
<td>23.5 x 23.5 x 3/4&quot;</td>
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<td>Ultima</td>
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<td>Clean Room FL</td>
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<td>23.5 x 47.5 x 3/4&quot;</td>
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<tr>
<td></td>
<td>3398</td>
<td>Optima</td>
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<td></td>
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**PERFORMANCE SELECTION**

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<th>Anti-Mold &amp; Mildew</th>
<th>Sag Resistance</th>
<th>VOC Emissions</th>
<th>Durability</th>
<th>Recycled Content</th>
<th>Recycle Program</th>
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<td>170</td>
<td>Class A</td>
<td>0.86</td>
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<td>Std</td>
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</tbody>
</table>

*These panels are specially sized and engineered for Prelude XL Max and must be used with the system. These panels do not fit in other suspension systems.*
OVERVIEW: FIVE EASY INSTALLATION STEPS
1. Install threaded rod to deck
2. Install the structural wall angle
3. Install main beams, screw attach PMHC to the mains and attach to threaded rods
4. Snap in cross tees
5. Slide on and secure the load connectors

IMPORTANT: Connections for load-carrying grid form a structural element. Please take time to understand and follow installation instructions to ensure rated load performance.

Prelude® Max Hanging Clip (PMHC)

Prelude® XL® Max™ Load Connector (PMLC)

Top Lock Main Beam Splice Clip (TLMBS)

Intersection Joint Clip (IJC)
SEISMIC DATA

SEISMIC INFORMATION

IBC categories D, E and F must also meet these additional requirements:

- Structural wall angle is to be used along the perimeter with a XTAC clip attaching the grid to the angle molding, along fixed walls only.
- Grid must be attached to two adjacent walls – opposite walls must have a 3/4" clearance in accordance with ASTM E580.
- Ends of main beams and cross tees must be connected together to prevent their spreading. These should be locked into place using the lateral support bar.
- Ultra Heavy-duty grid system. See load data.
- Ceiling areas over 1,000 SF must have standard rigid bracing for the grid.
- Ceilings without rigid bracing must have 2" oversized trim rings for sprinklers and other penetrations.
- Changes in ceiling plane must have positive bracing.
- Suspended ceilings will be subject to special inspection.

NOTE: Consult your local code professional for information specific to your region. California projects may be governed by DSA and OSHPD.

NOTE: The structural wall molding and the lateral support bar must be fastened to wall stud framing using a #8 steel framing screw of an appropriate length or positively attached to other support structures.
PRELUDE® XL® MAX™ LOAD CONNECTOR – MID-SPAN POINT LOADS

Values are not valid when a TLMBS is within the span

<table>
<thead>
<tr>
<th>Item No.</th>
<th>2 Ft</th>
<th>3 Ft</th>
<th>4 Ft</th>
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</table>

Max mid span load = 93 lbs
Max point load within 3” of threaded rod = 300 lbs

NOTES: These values are based on the spans being installed in a 2’ x 2’ module (using a 2’ tee).
Unbraced or 2’ x 4’ modules will have a lower mid span load value.

For additional loading configurations, contact Techline for guidance and a qualified engineering professional.

All numbers above are for use with a 2’ x 2’ ceiling tile installation.
SYSTEM LAYOUT

LOADING LAYOUTS

System Performance Criteria*

<table>
<thead>
<tr>
<th>Hanging Method</th>
<th>Loading with-in 3&quot; of threaded rod support with building connections 4' x 4' on centers</th>
<th>Loading with-in 3&quot; of threaded rod support with building connections 4' x 2' on centers</th>
<th>Loading with-in 3&quot; of threaded rod support with building connections 2' x 2' on centers</th>
<th>Mid Span Loading with building connections 4' x 4' on centers</th>
<th>Mid Span Loading with building connections 4' x 2' on centers</th>
<th>Mid Span Loading with building connections 2' x 2' on centers</th>
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<tbody>
<tr>
<td>Point Load (lbs)</td>
<td>300lbs</td>
<td>300lbs</td>
<td>300lbs</td>
<td>93lbs</td>
<td>93lbs</td>
<td>117lbs</td>
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<tr>
<td>Area Load (lbs/ft²)</td>
<td>18.75lbs/ft²</td>
<td>37.5lbs/ft²</td>
<td>75lbs/ft²</td>
<td>5.8lbs/ft²</td>
<td>11.6lbs/ft²</td>
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<tr>
<td>Ultimate Load (lbs/ft²)</td>
<td>646lbs</td>
<td>646lbs</td>
<td>646lbs</td>
<td>210lbs</td>
<td>210lbs</td>
<td>429lbs</td>
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Unistrut Beam & Bridging Guidelines

Load Condition

Simple Beam, Concentrated Load at Mid-Span

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<th>Span</th>
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<td>300lbs</td>
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<tr>
<td>5'</td>
<td>300lbs</td>
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<tr>
<td>6'</td>
<td>300lbs</td>
</tr>
<tr>
<td>7'</td>
<td>300lbs</td>
</tr>
<tr>
<td>8'</td>
<td>300lbs</td>
</tr>
<tr>
<td>P1000</td>
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Simple Beam, Two Equal Concentrated Loads at 1/4 pts

<table>
<thead>
<tr>
<th>Span</th>
<th>Maximum Point Load 300 lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>8'</td>
<td>300lbs</td>
</tr>
<tr>
<td>9'</td>
<td>300lbs</td>
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<tr>
<td>10'</td>
<td>300lbs</td>
</tr>
<tr>
<td>11'</td>
<td>300lbs</td>
</tr>
<tr>
<td>12'</td>
<td>300lbs</td>
</tr>
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<td></td>
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<tr>
<td>P5501</td>
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NOTE: When additional structural support is necessary due to limitations of structural attachment points, strut channel systems may be used. The above member selection tables are to be used as general guidelines and must be designed by a qualified structural engineer. The member size requirements in the tables may potentially be reduced.
SINGLE POINT CONNECTION

- **Cable Tray (By others)**
  - See manufacturer of cable tray for the recommendation of seismic bracing for the cable tray

DUAL POINT CONNECTION

- **Cable Tray (By others)**
  - See manufacturer of cable tray for the recommendation of seismic bracing for the cable tray
TAKE THE NEXT STEP

1 877 276 7876
Customer Service Representatives
7:45 a.m. to 5:00 p.m. EST
Monday through Friday

TechLine – Technical information, detail drawings,
CAD design assistance, installation information,
other technical services – 8:00 a.m. to 5:30 p.m. EST,
Monday through Friday. FAX 1 800 572 8324
or email: techline@armstrongceilings.com

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A Ceiling for Every Space® Visual Selection Tool
Product literature and samples – express service
or regular delivery
Contacts – reps, where to buy, who will install

YOU INSPIRE™ SOLUTIONS CENTER
1 800 988 2585
email: solutionscenter@armstrongceilings.com
armstrongceilings.com/youinspire

Design Assistance
Collaborative design
Detail drawings
Specifications
Planning and budgeting
Pre-construction Assistance
Layout drawings for standard
and premium products
Project installation recommendations
Contractor installation assistance

you inspire™ solutions center
helping to bring your one-of-a-kind ideas to life

Inspiring Great Spaces®