

FORTINATM LightStrip



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B+N Industries

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FORTINA LightStrip

Fortina's wood-like finishes are now enhanced by seamlessly integrated, energy-efficient LED lights. This addition not only highlights the natural warmth and texture of our Battens but also provides a practical

solution for ambient lighting. By embedding the LEDs directly into the design, with enough diodes to eliminate hot spots, we offer a versatile product that delivers both visual appeal and functional illumination, suitable for a variety of spaces.



A moorwor2

A moorwor

Auto Nation HQ, Fortina Battens and Fortina LightStrips. Batten and Finish: TA-647 in Earl Walnut M



King of Prussia Lobby. Fortina Battens and Fortina LightStrips. Batten and Finish: TA-647 in Earl Walnut M



Quantum Si. Fortina Battens and Fortina LightStrips. Batten and Finish: TA-758 in Vent Walnut N. Design: Svigals + Partners Photography: Todd Mason of Halkin Mason Photography



Apex and Lawrence Station. Fortina Battens and Fortina LightStrips. Batten and Finish: THS-5015 and TLKS-5015 in TE-2039 English Walnut G



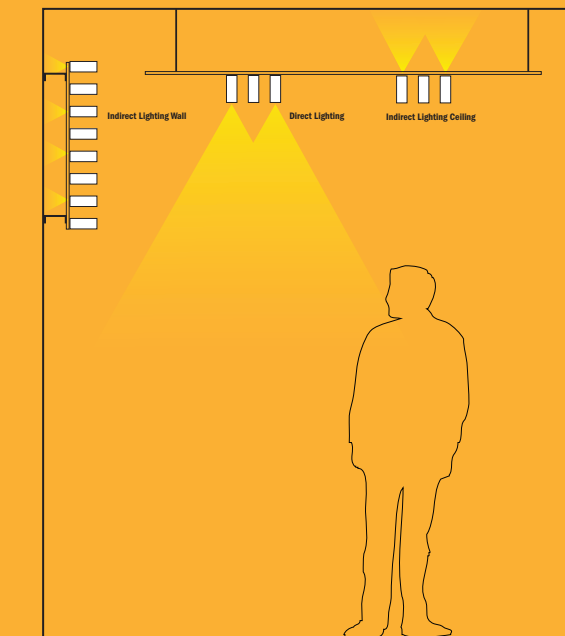


Paul Smith. Fortina Battens and Indirect Fortina LightStrips. Batten and Finish: THA-3010 in TESN-2038 Stretta Teak M

Choose Your Lighting Scenario

FORTINA LIGHTSTRIP BENEFITS:

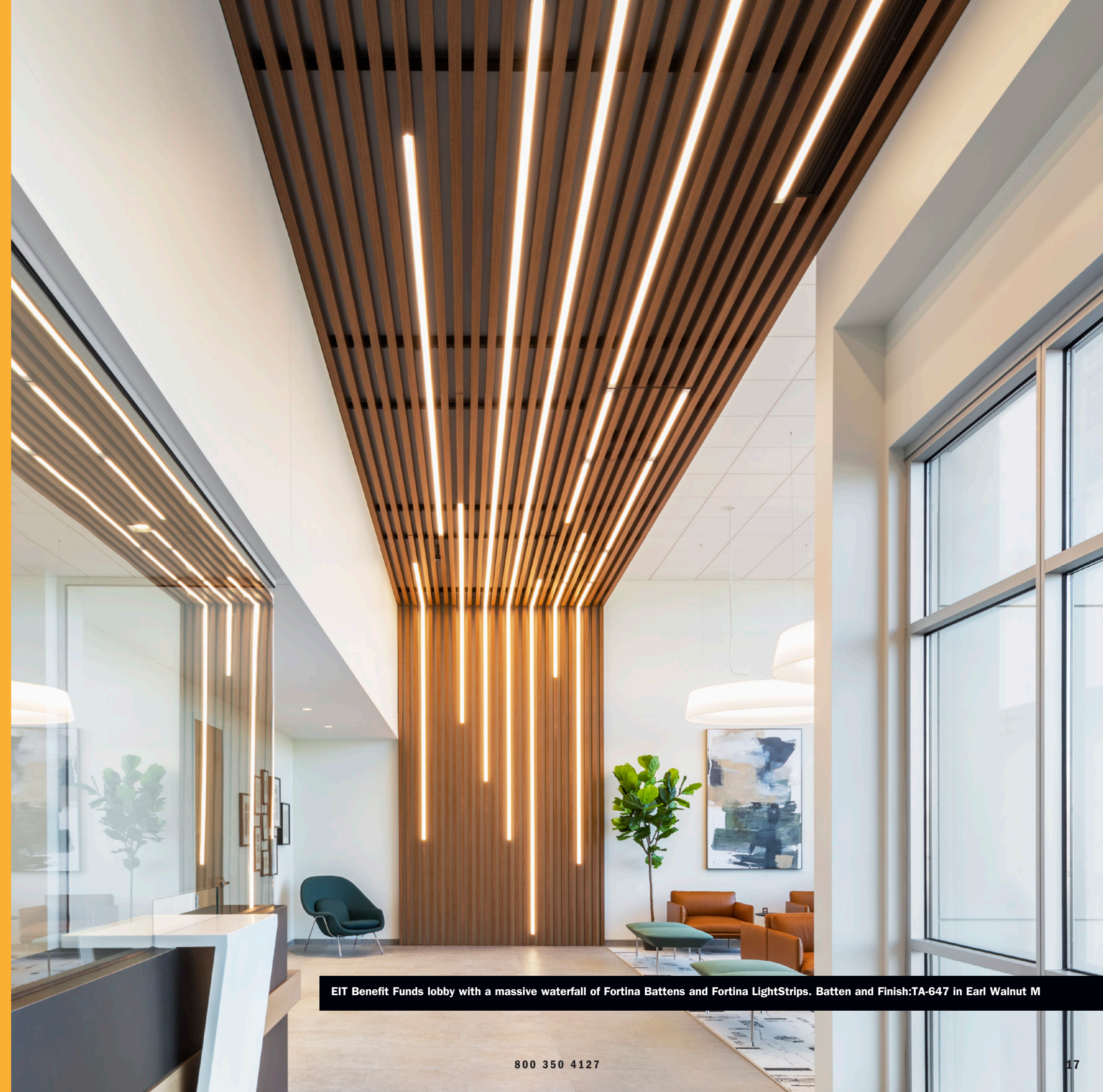
- Fully integrated LED lighting within the Fortina Batten
- Light applications customized to your project
- Fully diffused and uninterrupted linear lighting
- Indoor & outdoor options
- Wide range of lumen output options
- Color (CCT) Range: 2000K-6300K
- 95+ CRI: Superior color rendering with high R9-R13 values
- Tunable White, RGBW, and Dim to Warm options available
- Dimming compatible with a wide range of wall dimmers and control systems
- IP65 Rating for outdoor applications



LIGHTING APPLICATIONS:

Direct Lighting: The light is integrated into the Fortina Batten and shown through our LED diffuser back rails that clip on seamlessly to the Fortina Batten. This causes the light to shine directly at the viewer, producing concentrated strips of light that create a sleek and modern look.

Indirect Lighting: The light is integrated into the Fortina Batten but does not face the viewer directly. Instead, the light illuminates from the back of the Fortina Batten, creating a soft glow around the Batten that helps reduce glare and shadows within a space.



EIT Benefit Funds lobby with a massive waterfall of Fortina Battens and Fortina LightStrips. Batten and Finish:TA-647 in Earl Walnut M

2

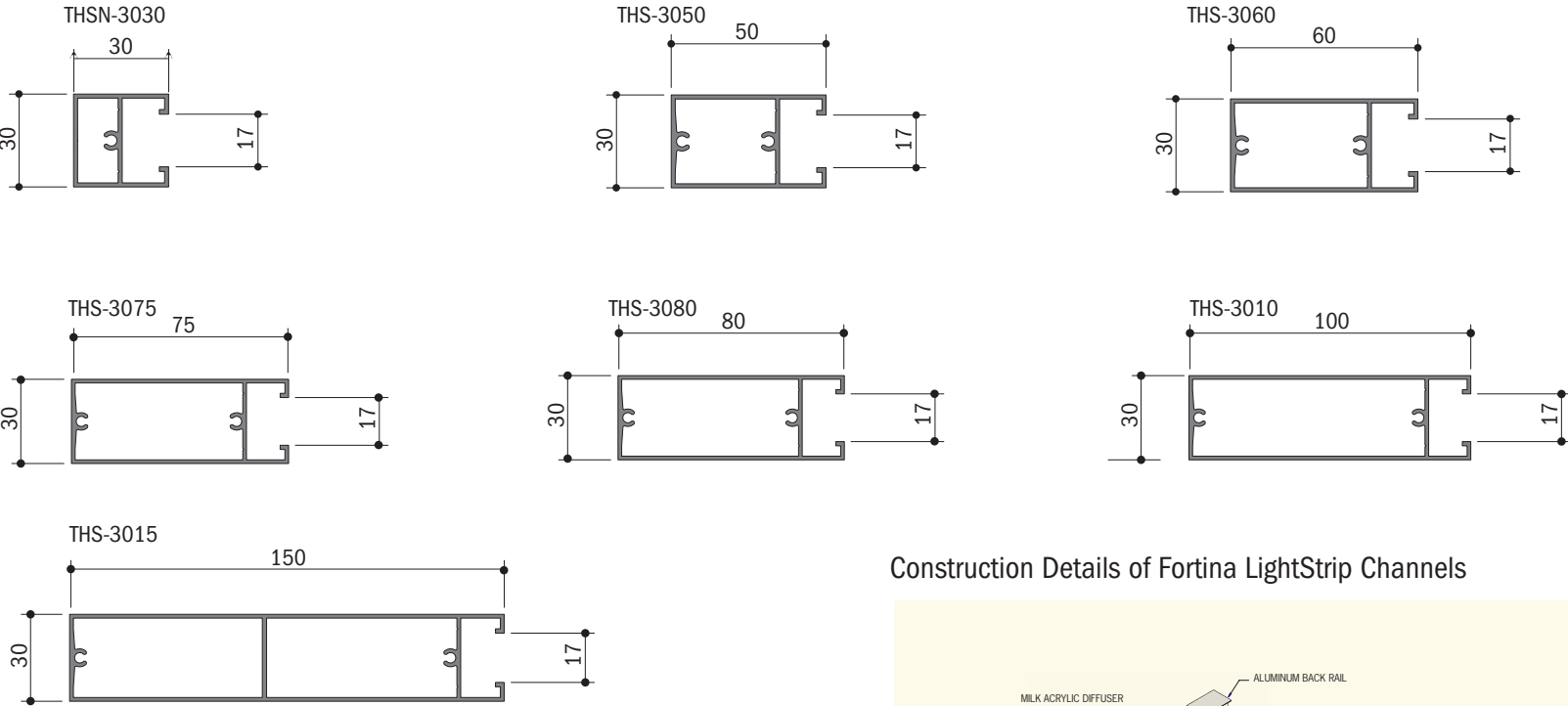
Select
Your
Profile Size
and
Installation
Option



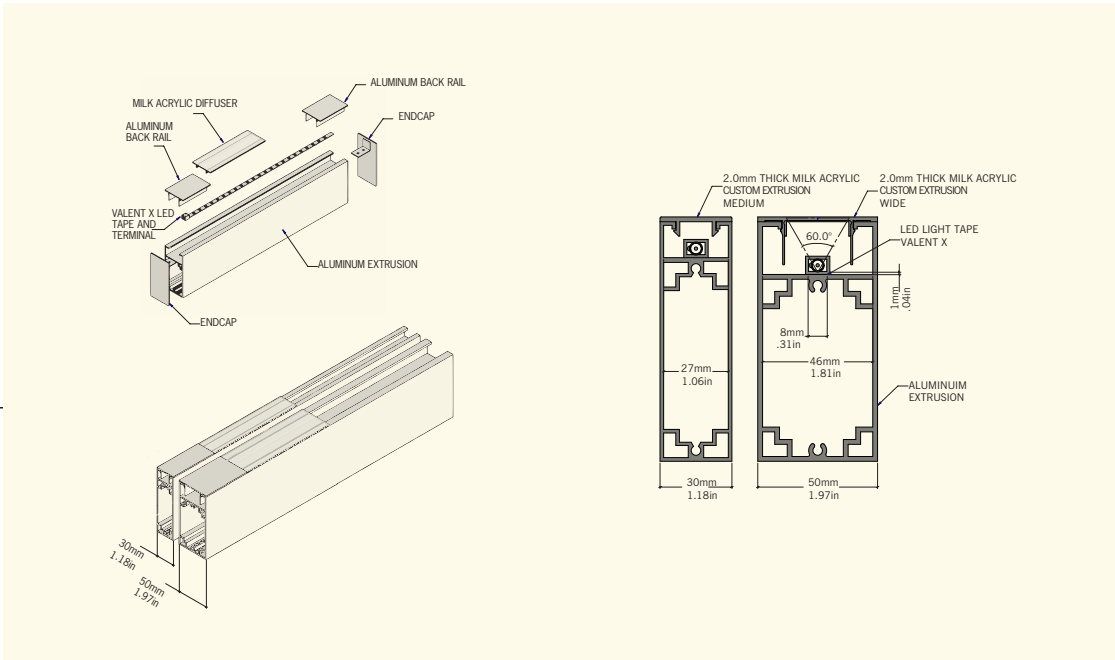
Batten Profiles Available for Fortina LightStrip

Note: all dimensions are in mm. See Finishes Guide for finishes.

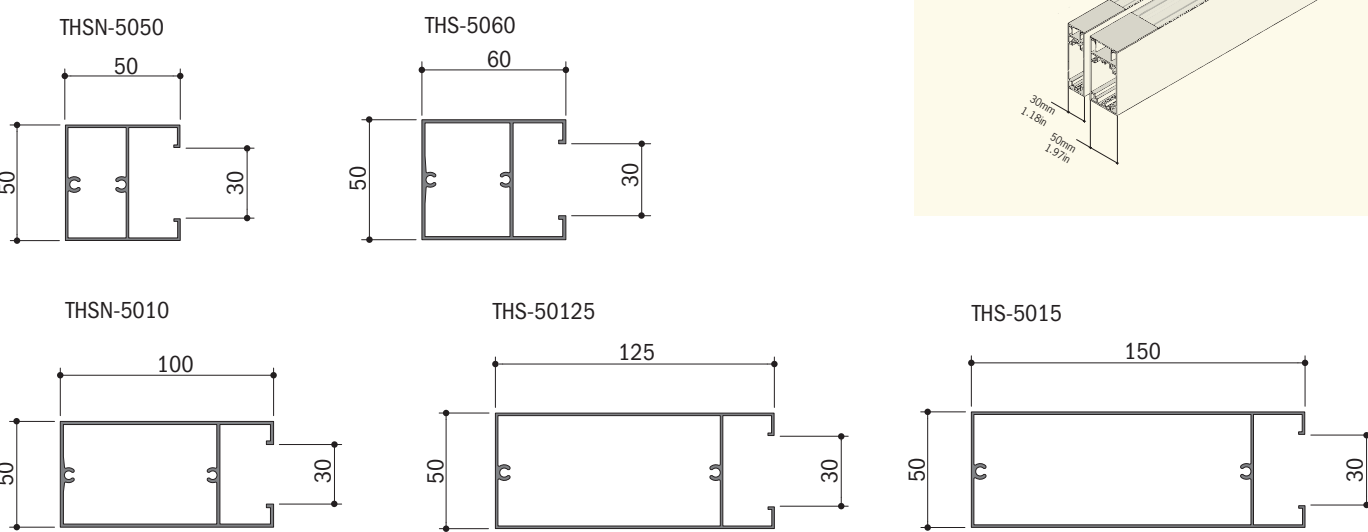
SQUARE 30



Construction Details of Fortina LightStrip Channels



SQUARE 50

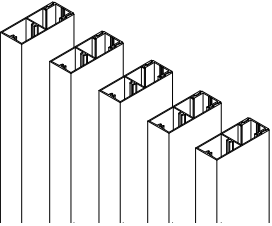


Installation Options for Fortina LightStrip

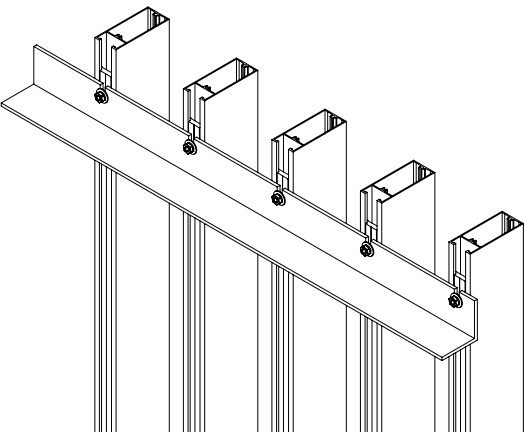
See Installation Instructions for detailed specifications

Vertical On Wall

Direct Attachment with interlocking Batten and back rail. Screw back rails at desired locations vertically to the wall and lock Batten into it. It is recommended that you secure the back rail with small screw on side at top and bottom. Add end caps if needed.

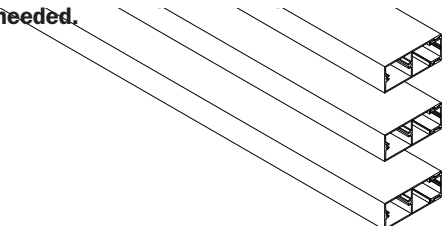


Stringer Mounted Battens Attach Stringers horizontally to the wall structure with L-brackets, Unistrut, L-angles or similar. Stringers will be pre-notched to create the designed Batten spacing. Secure Battens to the Stringers with special Fortina clips. Add end caps if needed.

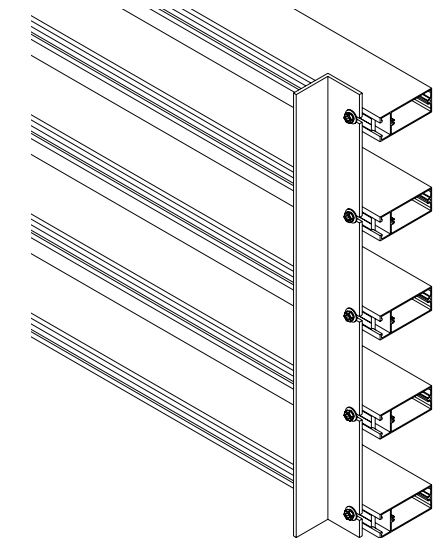


Horizontal On Wall

Direct Attachment with interlocking Batten and back rail. Screw back rails at desired locations horizontally into the wall and lock Batten into it. It is recommended that you secure the back rail with small screw on side at top and bottom. Add end caps if needed.

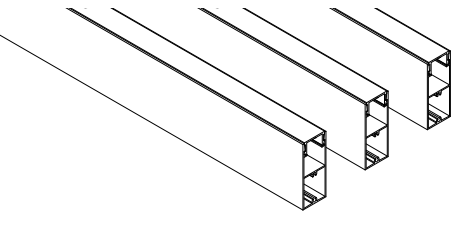


Stringer Mounted Battens Attach Stringers vertically to the wall structure with L-brackets, Unistrut, L-angles or similar. Stringers will be pre-notched to create the designed Batten spacing. Secure Battens to the Stringers with special Fortina clips. Add end caps if needed.

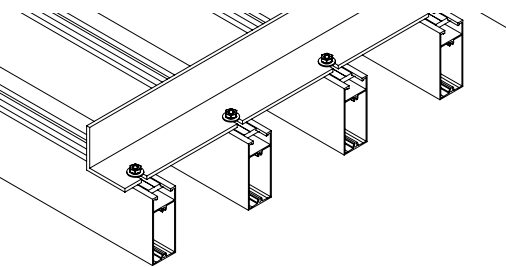


Ceiling

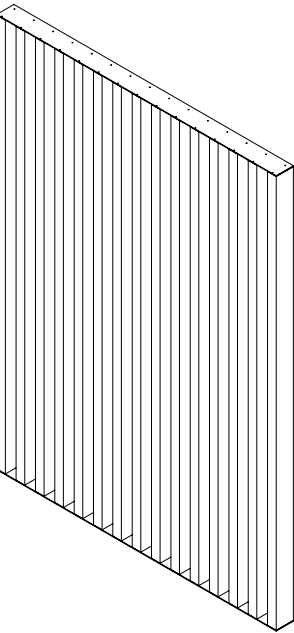
Direct Attachment with interlocking Batten and back rail. Screw back rails at desired locations into the ceiling and lock Batten into it. It is recommended that you secure the back rail with small screw on side at each end. Add end caps if needed.



Stringer Mounted Battens Hang Stringers from the ceiling structure with rods, Unistrut or L-brackets. Stringers will be pre-notched to create the designed Batten spacing.

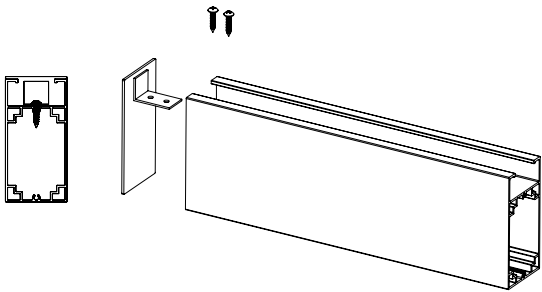


Floor-To-Ceiling Battens are connected at top and bottom with L-brackets. Attach short side of the L- bracket to floor and to ceiling at desired locations. Slide in the Batten and attach to brackets. Snap in the back rail to cover the connections.



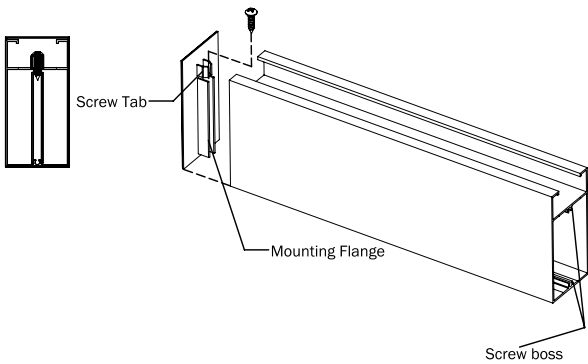
Batten End Caps

Materials: Aluminum Plate or ABS. Sold in sets of 20.



Bracketed
Used on: Domestic THS
3010/5010/5015 Battens
Material: Steel
Finish: Powder Coat to Match
Batten Finish

Installation: Align end cap to bat-
ten face and pre-drill 1/8" pilot
holes. Firmly hold the cap in place
and install two #8 sheet metal
screws (not included) as shown.



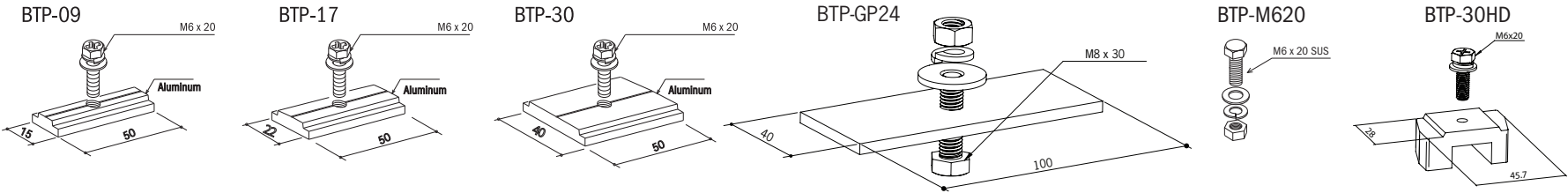
Snap-on
Used on: THS (Stringer-Attach)
Battens
Material: Aluminum
Finish: Powder Coat match or
Wood Grain

Installation: Align the mounting
flanges on either side of the
screw boss with the screw tab
facing the open back channel
as shown. Tap the end cap with
a soft mallet to press-fit it in
place and screw a #10 sheet
metal screw (not included)
onto the tab for added
retention.

Interior and Exterior Wall And Ceiling Applications With Stringers > Accessories

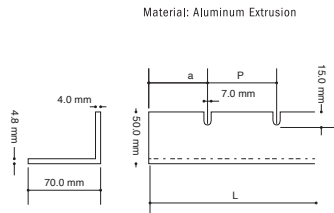
Note: all dimensions are in mm. See Finishes Guide for finishes.

CLIPS FOR ATTACHING BATTENS TO STRINGERS (SOLD IN SETS OF 20)

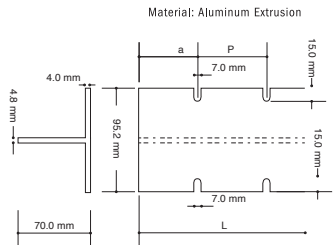


STRINGERS

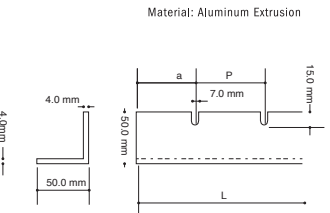
STAL-5



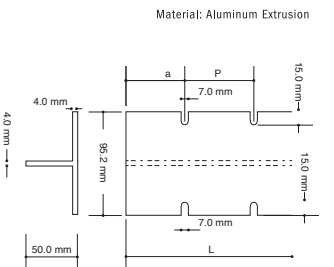
STAL-6



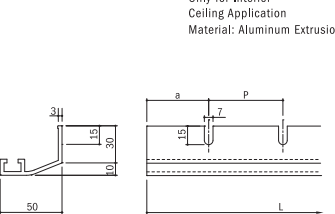
STAL-7



STAL-8



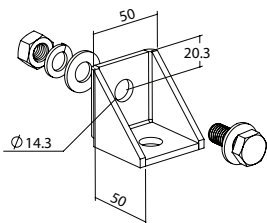
STCL-1



STRINGER FITTINGS (SOLD IN SETS OF 10)

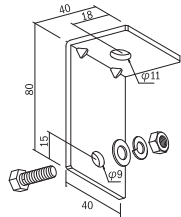
BTS-5050 WELDED GUSSET

Material: A607-50 High Strength Steel 4.1mm
Black Powder Coat Finish
Used with STAL-7/8 Stringer



BTS-4080ST

Material: Polished Chrome Finish
ST = 3.2mm
Used with STCL-1 Stringer





Tetra Hotel. Fortina Battens and Fortina LightStrips. Batten and Finish: TE-SN2068 in Lindo Acacia LB

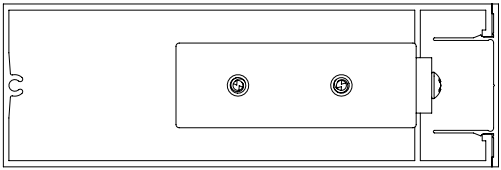
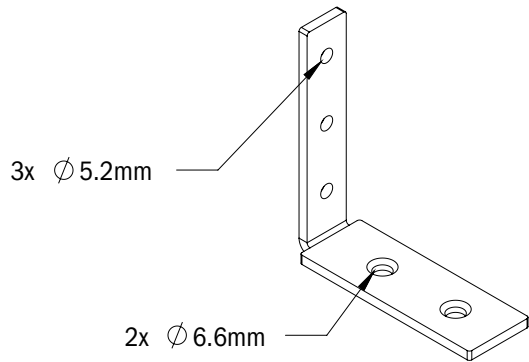
BATTEN PROFILES AND ACCESSORIES

Floor-To-Ceiling Applications > L-Brackets

Note: all dimensions are in mm

TBF HD L-BRACKET
ITEM #1142588
Finish: Black Powder Coat

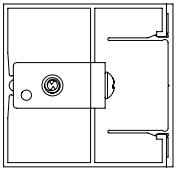
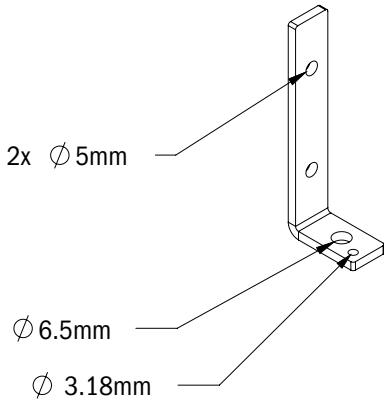
Compatible with:
THS-6012
THS-5015/50125/5010
THS-3015/3010



THS-5015 Shown for Reference

TBF L-BRACKET LITE
ITEM #1142584
Finish: Black Powder Coat

Compatible with:
THS-5060/THSN-5050
THS-4080/4050/4040
THS-3080/3075/3060/3050
THS-2580/2570
THS-2015/2010/2080/2060/2040



THSN-5050 Shown for Reference



Choose
Your
Wood
Species.



Interior
Finishes

Please note that the color in the brochure may vary from the actual product. Each design collection is subject to change periodically without notice.



TE-SN2122
Lunta Elm WG



TE-SN2107
Farine Ash W



TE-SN2015
Crema Chestnut CW



TE-SN2108
Nuage Chestnuts W



TE-SN2063
Brilas Wood W



TE-SN2065
Sklira Ash W



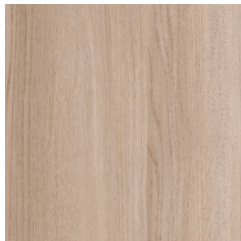
TE-SN2080
Marble Wood W



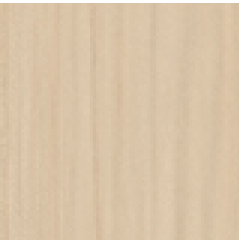
TE-SN947
Madras Walnut W



TE-SN2117
Bonamana Ash WG



TE-SN2113
Ravin Oak N



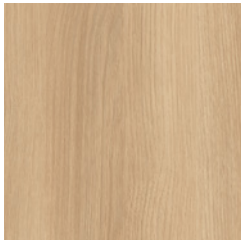
TE-SN2084
Brook Willow W



TE-SN2114
Chrome Ash WG



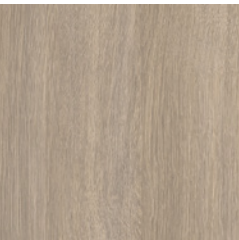
TE-SN2025
Maquillage Elm TG



TE-SN2073
Pulito Oak N



TE-SN2124
Nocturne Walnut G



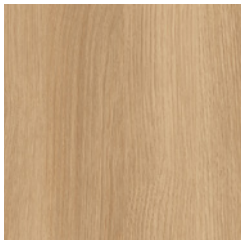
TE-SN2087
Thermos Oak LG



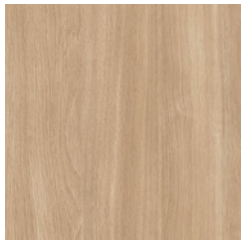
TE-SN2123
Limber Oak N



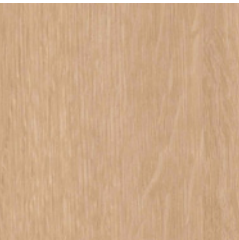
TE-SN2055
Revlon Wall W



TE-SN2074
Pulito Oak L



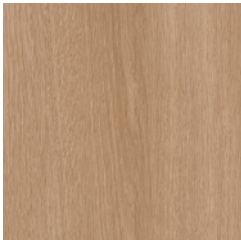
TE-SN2118
Elg Oak N



TE-SN2035
Axis Oak N



TE-SN882
Norte Oak L



TE-SN2053
Frettare Oak N



TE-SN2058
Legacy Ash G



TE-SN2060
Tendre Walnut LG



TE-SN2109
Nuage Chestnuts BG



TE-SN2115
Fresco Teak BG



TE-SN2095
Saloon Eucalyptus G



TE-SN2119
Tinta Oak G



TE-SN2066
Sklira Ash G



TE-SN2099
Humming Elm G



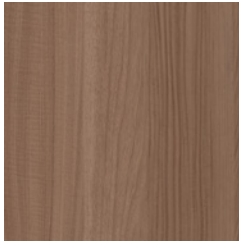
TE-SN2100
Diera Oak N



TE-SN2104 à
Sieg Birch N



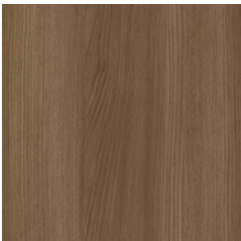
TE-SN2039
English Walnut G



TE-SN2069
Lindo Acacia G



TE-SN883
Norte Oak G



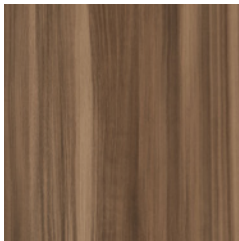
TE-SN2110
River Ash M



TE-SN2121
Savor Bokote DB



TE-SN2116
Fresco Teak G



TE-SN2091
Allegro Cherry G



TE-SN2092
Agile Walnut M



TE-SN2064
Brilas Wood DG



TE-SN2059
Legacy Ash DG



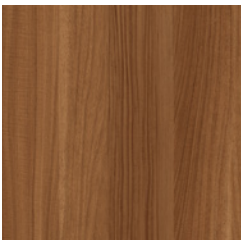
TE-SN2061
Tendre Walnut MG



TE-SN2125
Petra Ash M



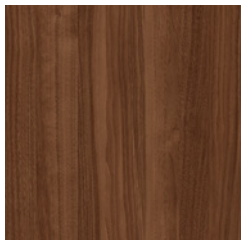
TE-SN2120
Dusk Walnut M



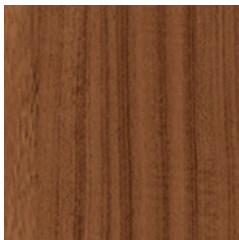
TE-SN2067
Lindo Acacia M



TE-SN2056
Revlon Wall M.



TE-SN2057
Revlon Wall B



TE-SN2068
Lindo Acacia LB



TE-SN2050
Symphony Walnut B



TE-SN2103
Ars Cherry M



TE-SN902
Bliss Walnut B



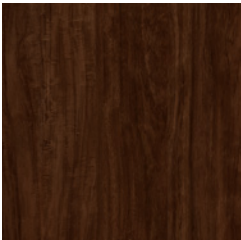
TE-SN2102
Flag Cheek M



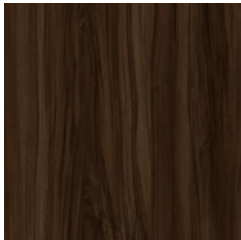
TE-SN948
Madras Walnut DG



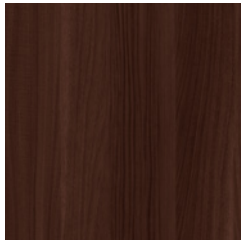
TE-SN2051
Symphony Walnut D



TE-SN2062
Noir Imbuia D



TE-SN2112
Nouvelle Castillo D



TE-SN2070
Lindo Acacia BL



TE-SN2040
English Walnut BL

Interior
Finishes

Please note that the color in the brochure may vary from the actual product. Each design collection is subject to change periodically without notice.



TE-SN2081
Marble Wood DG



TE-SN2106
Plage Tineo B



TE-SN2111
Nouvelle Castillo G



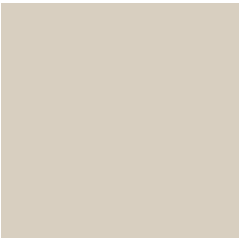
TE-SN2089
Thermos Oak D



TE-SN2097
Stella Elm BL



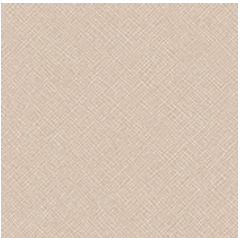
TE-SN7105
Mode Metal W



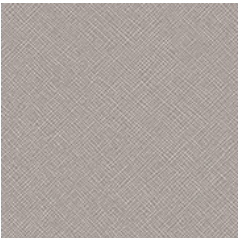
TE-SN7003
Pure Mist



TE-SN7106
Minerva Stucco W



TE-SN7100
Reflet Cloth W



TE-SN7101
Reflet Cloth G



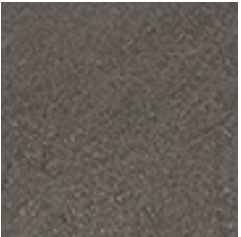
TE-SN7110
Belladonna Marble G



TE-SN7102
Mode Metal LG



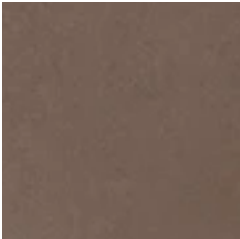
TE-SN7001
Pure Gray



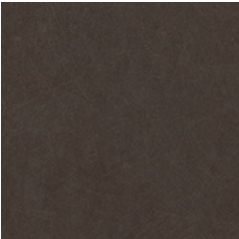
TE-SN7107
Minerva Stucco DG



TE-SN7109
Coco Sand LG



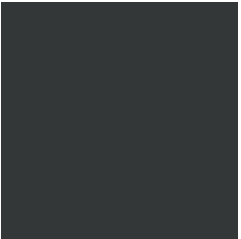
TE-SN7108
Mode Metal BG



TE-SN7103
Mode Metal B



TE-SN7104
Mode Metal BL



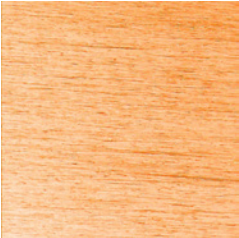
TE-SN7002
Pure Black



AB1010
Silver



AB1020
Champagne



AA1090
Rose Gold



AB1100
Light Gold



AB1030
Golden Bronze



AB1040
Light Bronze



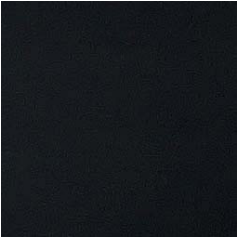
AB1050
Medium Bronze



AB1060
Dark Bronze



AB1070
Deep Bronze



AB1080
Black

Exterior
Finishes

Please note that the color in the brochure may vary from the actual product. Each design collection is subject to change periodically without notice.



TAR-012
Bamboo



TAR-005
Rican Oak



TAR-758
Vent Walnut N



TAR-004
Rokko Cedar



TAR-028
Pacific Gray



TAR-647
Earl Walnut M



TAR-030
Machilus



TAR-532
Cherry Line M



TAR-021
Criollo Elm



TAR-014
Antique Cedar RB



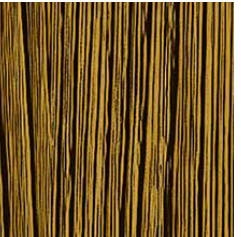
TAR-602
Vintage Walnut



TAR-605
Blossom Birch



TAR-760
Vent Walnut D



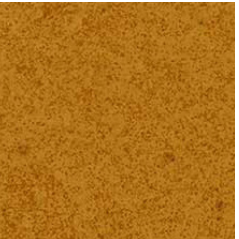
TAR-013
Antique Cedar G



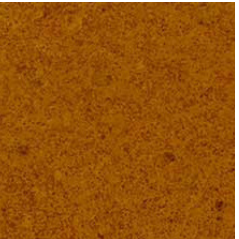
TAR-808 Vent
Walnut BL



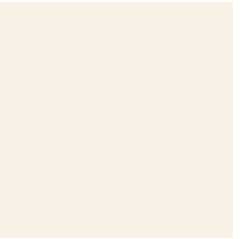
TAR-775
Carina Elm D



TAR-001
Terra Cotta Clay



TAR-002
Terra Cotta Arrosto



TQ-093*
Win White *Semi-Exterior



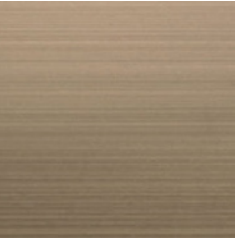
TAR-2035
Axis Oak



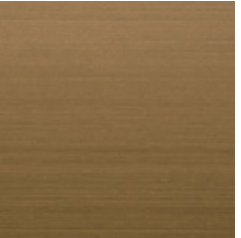
SN
Silver



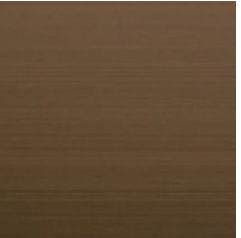
RB-5N
Stain Color



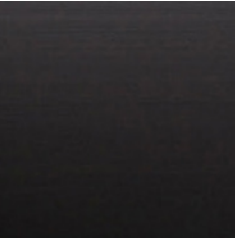
RB-4N
Light Bronze



RB-3N
Bronze



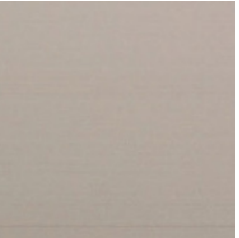
RB-2N
Dark Bronze



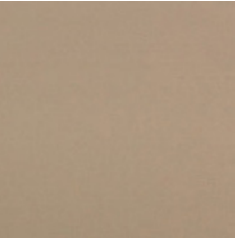
RB-1N
Black



NS-SN
Silver Matte



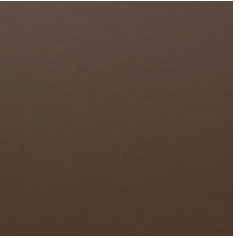
NS-5N
Stain Color Matte



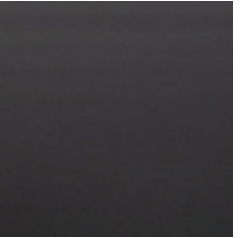
NS-4N
Light Bronze Matte



NS-3N
Bronze Matte



NS-2N
Dark Bronze Matte



NS-1N
Black Matte

Exterior
Anodized
Finishes
(QuickShip)

Please note that the color in the brochure may vary from the actual product. Each design collection is subject to change periodically without notice.

Exterior
Anodized
Finishes
(Special Order)

Please note that the color in the brochure may vary from the actual product. Each design collection is subject to change periodically without notice.

Fortina Quick Ship

Timeless Design, Fast Turnaround

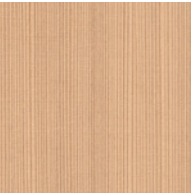
Fortina's Quick Ship program delivers the same timeless beauty of natural wood and unmatched durability of aluminum but with the speed and convenience needed for tight timelines. Manufactured and assembled in the United States, Quick Ship profiles ship in as little at 72 hours, ensuring your project stays on track without the compromise of quality or design.

Finishes

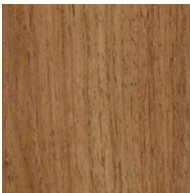
Wood Grain



TAR-758
Vent Walnut N



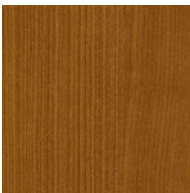
TAR-004
Rokko Cedar



TAR-647
Earl Walnut M



TAR-005
Rican Oak



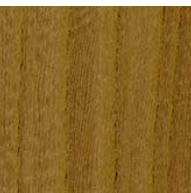
TAR-532
Cherry Line M



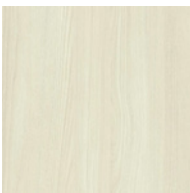
TAR-028
Pacific Gray



TAR-775
Carina Elm D



TAR-021
Criollo Elm



TAR-2122
Lunta Elm



TAR-2035
Axis Oak

Anodized



AB1010
Silver



AB1020
Champagne



AA1090
Rose Gold



AB1100
Light Gold



AB1030
Golden Bronze



AB1040
Light Bronze



AB1050
Medium Bronze



AB1060
Dark Bronze

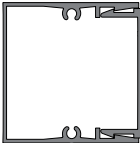


AB1070
Deep Bronze



AB1080
Black

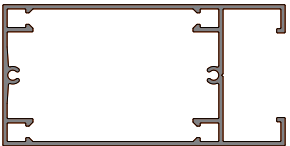
Profiles



TLKS-5050
50mm x 50mm (~2" x 2")



THS-3010
30mm x 100mm (~1.2" x 4")



THS-5010
50mm x 100mm (~2" x 4")



THS-5015
50mm x 150mm (~2" x 6")



THS-50250
50mm x 250mm (~2" x 10")

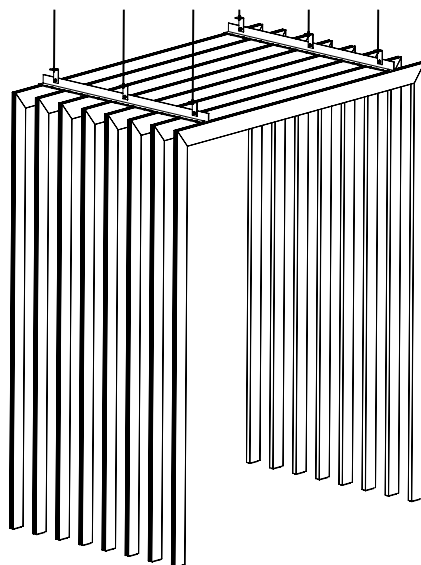
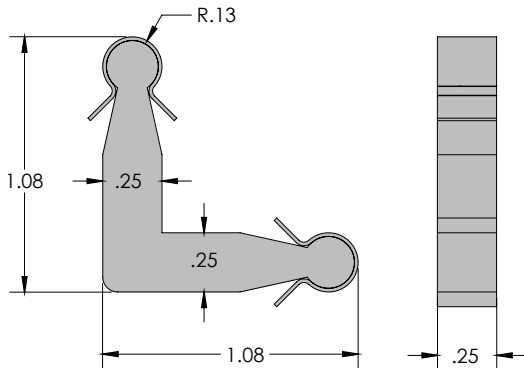
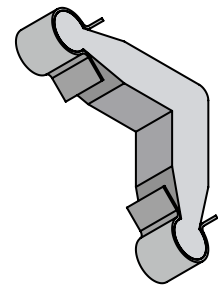


Why choose Fortina Quick Ship?

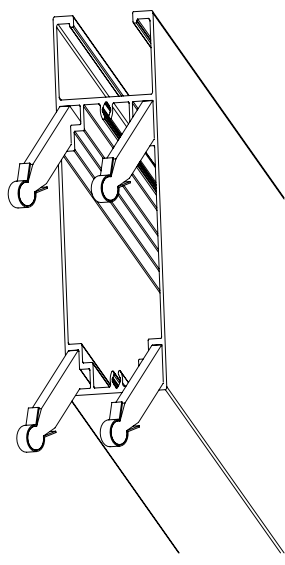
- **Made in the USA**
Profiles and finishes are manufactured and assembled domestically for faster availability and a reduced carbon footprint.
- **Fast Shipping**
Select profiles and finishes ship in just 72 hours.
- **Wide Range of Options**
Choose from multiple profiles and finishes to fit any design vision.
- **Integrated Lighting**
Quick Ship profiles are available with energy-efficient, integrated lighting to add functional ambiance.
- **Built to Last**
Lightweight, weather-resistant, and easy to maintain, Fortina is designed to perform in demanding environments.

Mitered Joints: The Corner Key

Square corner keys allow compatible battens to be miter cut and joined at 90 , resulting in a cleaner aesthetic than traditional butt joints. B+N's Quick Ship program offers THS- Type Battens (Pictured) with integral pockets that allow corner keys to be hammered in for a secure connection*.



Archways or overhangs are one way to use the Corner Keys with mitered Battens.



Batten with Corner Keys installed.

*Corner Keys are not suitable for structural applications.



THS-5015 in TA-532 Cherry Lime M at the Marion Fire Station Headquarters.

Select Your
Color
Temperature,
Brightness,
Calculate Your
Power Needs,
and Choose
Your Driver.

		24VDC				
		100 LUMEN RANGE VLX1 Max. Run: 80 ft. Cut Points: 1.32 in. Wattage: 1.0W/ft.	200 LUMEN RANGE VLX2 Max. Run: 53 ft. Cut Points: 1.32 in. Wattage: 1.9W/ft.	300 LUMEN RANGE VLX3 Max. Run: 41 ft. Cut Points: 1.32 in. Wattage: 2.8W/ft.	500 LUMEN RANGE VLX5 Max. Run: 30 ft. Cut Points: 1.32 in. Wattage: 4.6W/ft.	800 LUMEN RANGE VLX8 Max. Run: 19 ft. Cut Points: 1.32 in. Wattage: 7.2W/ft.
CCT	Lumens/ft.	Lumens/ft.	Lumens/ft.	Lumens/ft.	Lumens/ft.	
	2000K	104	194	299	–	–
	2200K	104	194	299	–	–
	2400K	104	194	299	469	730
	2700K	101	207	311	495	782
	3000K	106	218	323	557	853
	3500K	108	218	328	586	906
	4000K	112	228	342	534	806
	5000K	116	242	365	592	840
	6300K	112	244	363	578	924

LED Strips For Fortina LightStrip

For installation of LED Strips, see Installation Instructions

VALENT® X

High-Density LED Tape Light

Precision-engineered, high-density tape light for demanding applications when light quality matters most. Up to 900+ lumens per foot with 95+ CRI/90+ R9.



DI	VOLTAGE	MODEL	LUMEN SERIES	CCT	LENGTH
DI	24V	(24VDC)	VLX	1	(100 Lumen Range)
				2	(200 Lumen Range)
				3	(300 Lumen Range)
				5	(500 Lumen Range)
				8	(800 Lumen Range)
				20	(2000K)
				22	(2200K)
				24	(2400K)
				27	(2700K)
				30	(3000K)

EXAMPLE: 24V VALENT® X 800 LUMENS 5000K 16.4 FT. SPOOL = DI-24V-VLX8-50-016

	24VDC				
	100 LUMEN RANGE	200 LUMEN RANGE	300 LUMEN RANGE	500 LUMEN RANGE	800 LUMEN RANGE
	VLX1	VLX2	VLX3	VLX5	VLX8
	Max. Run: 80 ft.	Max. Run: 53 ft.	Max. Run: 41 ft.	Max. Run: 30 ft.	Max. Run: 19 ft.
	Cut Points: 1.32 in.	Cut Points: 1.32 in.	Cut Points: 1.32 in.	Cut Points: 1.32 in.	Cut Points: 1.32 in.
	Wattage: 1.0W/ft.	Wattage: 1.9W/ft.	Wattage: 2.8W/ft.	Wattage: 4.6W/ft.	Wattage: 7.2W/ft.
CCT	Lumens/ft.	Lumens/ft.	Lumens/ft.	Lumens/ft.	Lumens/ft.
2000K	104	194	299	–	–
2200K	104	194	299	–	–
2400K	104	194	299	469	730
2700K	101	207	311	495	782
3000K	106	218	323	557	853
3500K	108	218	328	586	906
4000K	112	228	342	534	806
5000K	116	242	365	592	840
6300K	112	244	363	578	924

FEATURES & BENEFITS

- Dense LED placement for uninterrupted linear light
- 95+ CRI/90+ R9
- Highest lumen output option

QUICK SPECS

Voltage	24VDC
Width	12mm
CRI	95+
Warranty	12 Year Limited Warranty
Dimming	Dimmable
Environment	Indoor/Damp Location (IP20)
Certification	UL Listed 2108
Connector	12mm Terminal Block

Visit the product page on the website for specification sheets, install guides, IES files, and photometric reports.

Power Sources for Fortina LightStrip

See Technical Specifications and Installation Instructions for detailed information. Contact your Sales Rep for power calculation needs.

Hardwired Driver

Omnidrive® X Dimmable Hard Wired Driver

OMNIDRIVE® X is a driver with universal dimmer compatibility in most high-performance dimming applications. Simplify installation with universal input voltage and multiple dimming protocols in a single driver.



24 VDC12 VDCTITLE 24NEMA 3R

FEATURES & BENEFITS

- ELV, TRIAC, and 0-10V dimming in a single driver
- 100-277VAC universal input
- No minimum load
- Minimum dimming level of <1%, depending on the dimmer
- UL Listed and Title 24 compliant

QUICK SPECS

Environment	Indoor/Outdoor
Input Voltage	100-277VAC
Output Voltage	12VDC & 24VDC Models
Connection Type	Hardwired
Warranty	5 Year Limited Warranty
Dimming	Forward Phase, Reverse Phase Dimming, and 0-10V Dimming
Certification	UL Listed & JA8/JA10 Compliant

Commercial Grade

Plug-In Adapter

24VDC Plug-in Adapters convert 120VAC voltage to 24VDC output. An adapter is the right choice for portable installations where hard-wiring is not desired.



24 VDC

FEATURES & BENEFITS

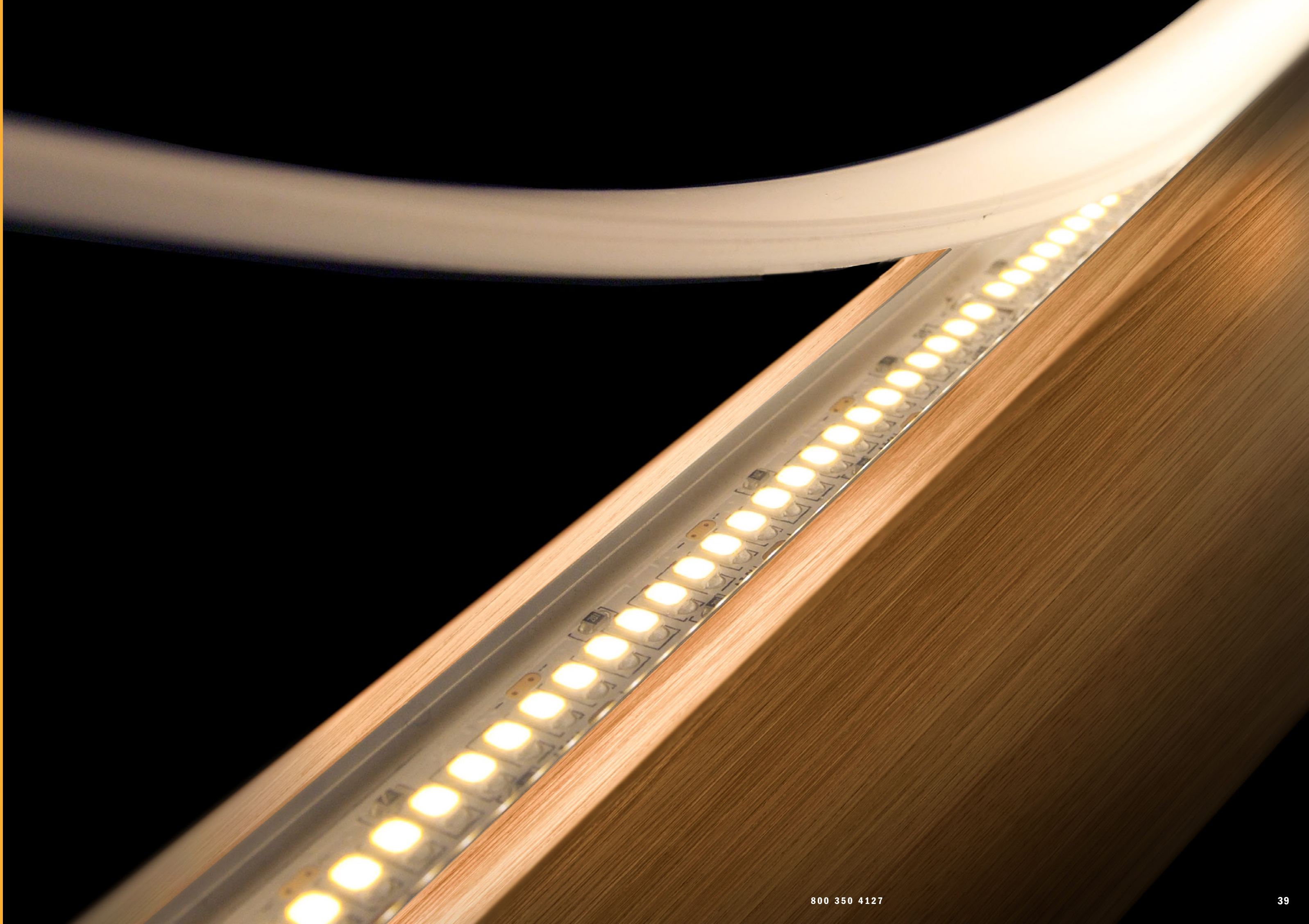
- Black Finish
- Short circuit, over current, over voltage, over temperature protections
- Fanless design / cooling by free-air convection
- UL Listed 1310 Class 2
- For use with commercial applications

QUICK SPECS

Environment	Indoor/Dry Location
Input Voltage	100-240VAC
Output Voltage	24VDC
Connection Type	Wire
Warranty	3 Year Limited Warranty
Dimming	PWM
Certification	UL Listed

5

Install the Tape and the Battens On Site



INSTALLATION INSTRUCTIONS

Valent X LED Tape

SAFETY & WARNINGS

- 1. Install in accordance with national and local electrical code regulations.
- 2. This product is intended to be installed and serviced by a qualified, licensed electrician.
- 3. Do not modify product beyond instructions or warranty will be void.
- 4. Do not submerge, nor install within 5 feet of a swimming pool.
- 5. Only install with a Listed Class 2 DC LED driver.
- 6. To avoid a visible reduction in light output, ensure wire gauge used with LED Tape Light is sufficient to keep under 3% voltage drop.
- 7. Do not exceed maximum run recommended for Tape Light.
- 8. Diode LED Tape Light is designed to be cut at designated cut points only. Cutting anywhere other than the cut points will result in damage to the Tape Light.
- 9. Failure to follow safety warnings, and installation instructions will void the warranty.

PROPER PREPARATION FOR LED TAPE ADHESION

Handling the Tape Light

- Wear latex gloves when handling tape light to prevent skin oils from contacting the yellow phosphor on the LED chip.
- Oils can stick to the phosphor and degrade it over time when the LEDs generate heat.

Preparing Mounting Surfaces

- Always clean the metal channel and surrounding surfaces thoroughly before applying tape light.
- Use a spray bottle with a 70% alcohol / 30% water solution.
- Allow the surface to dry for 3–5 minutes.
- Adhere the tape light as soon as the surface is dry to prevent dust or debris from settling on it again.

Installing in Aluminum Channel

- Start from the inner corner of the aluminum channel, depending on left-to-right or right-to-left install direction.
- This approach helps reduce dark spots at joints when connecting multiple 8' channel runs.
- How you start the run matters—position the tape light straight and even at the beginning to ensure the rest follows suit properly.

Wet Location LEDs

- Unroll wet-rated LED tape and lay flat to let the run relax before applying.
- Expect some separation between the silicone sleeve and adhesive in areas due to LED being stored in a coiled posture.
- During installation, use beanbags or light clamping to hold the LED in place.
- Allow 12 hours (or overnight) for the tape to fully relax and the adhesive to bond with both the metal and the silicone surfaces.
- Some applications and environments might require over-clips to help hold LEDs in place as the bond between adhesives and materials including our wet location silicon jacketed products may be impacted by factors such as temperature variation.



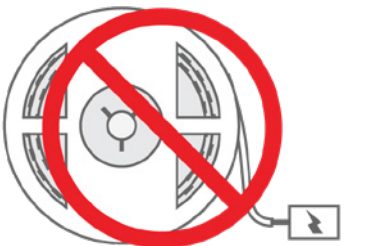
WARNING

DO NOT CONNECT DIRECTLY TO LINE VOLTAGE POWER!
Read all warnings and installaion instructions thoroughly.

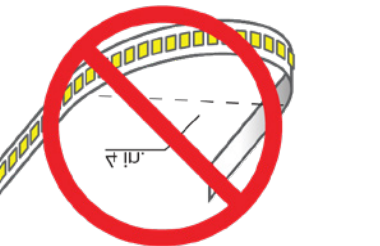
HANDLE WITH CARE



Do not cover Tape light with any materials.



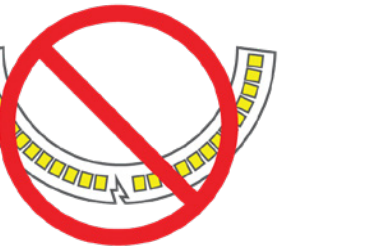
Do not power Tape Light while attached to spool or tightly coiled.



Do not bend LED Tape Light to a diameter less than 4 inches.



Do not fold, crease, or twist LED Tape Light.



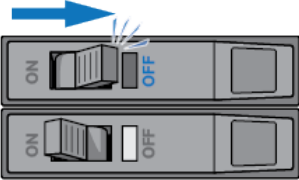
Do not bend LED Tape Light on a horizontal plane.

TECHNICAL INSTRUCTIONS

Valent X LED Tape

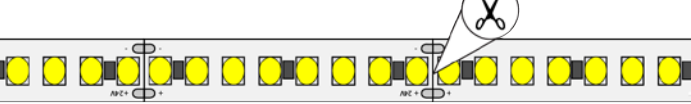
1. Turn Power Off at Circuit Breaker

Never cut tape light attached to a live circuit. Do not exceed Class 2 Limit.



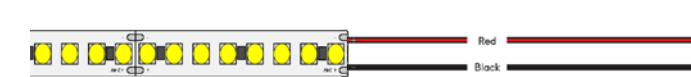
2. Cut Tape Light to Desired Length

Cut at line indicated by Scissor icon.



3. Connect Tape Light to Wire

Ensure polarity matches from the tape light to the wire.



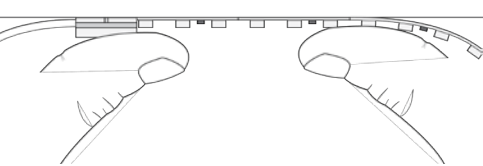
4. Mount Tape Light (Dry)

Clean surface before mounting.

Peel off 3M™ adhesive backing. Ensure minimum ambient temperature of 50°F (10°C) or tape light will not adhere properly.

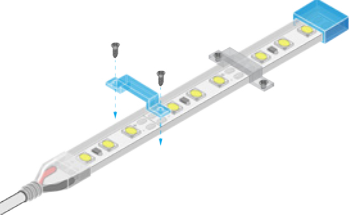
Tear off backing along connector edge.

Adhere to a smooth, dry surface, working from one end to the other, being gentle with the LEDs.



5. Mount Tape Light (Wet)

Mount using included mounting clips/screws. Silicone adhesive can also be utilized to mount tape light to surfaces.



6. Turn Power On at Circuit Breaker

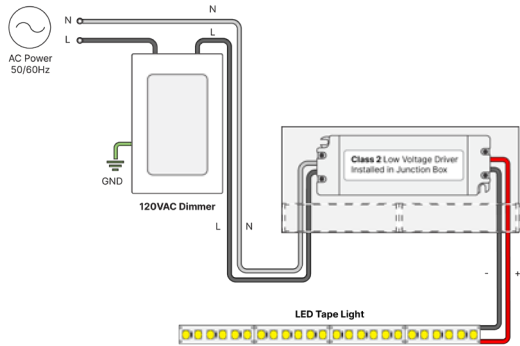
SYSTEM DIAGRAM

Mount using included mounting clips/screws. Silicone adhesive can also be utilized to mount tape light to surfaces.

The following diagram is an example system design. For information regarding larger systems or systems not pictured below, please see our web page or contact technical support. Always review each component installation guide for detailed and up-to-date wiring instructions. Install in accordance with national and local electrical codes.

Other diagrams will vary based on power and dimming requirements.

Standard Dimmer System



Omnidrive® X Dimmable Hard Wired Driver

Before you begin, read all warnings and installation instructions thoroughly.

Safety & Warnings

- Install in accordance with the National Electric Code, and local regulations.
- This product is intended to be installed and serviced by a qualified, licensed electrician.
- Only install compatible LED fixtures & controls. Only use copper wiring.
- Proper heat dissipation will prolong the working lifespan of this product. Install in a well-ventilated area free from explosive gases and vapors.
- Ensure applicable wire is installed between driver, fixture, and any controls in between. When choosing wire, factor in voltage drop, amperage rating, and type (in-wall rated, wet location rated, etc.). Inadequate wire installation could overheat wires, and cause a fire.
- Do not install if product has any visible damage.
- Do not modify or disassemble this product beyond instructions or the warranty will be void.

Quick Specs

Input Voltage	120-277VAC, 50/60Hz
Output Voltage	See driver label
Ambient Temperature †	-40°F ~ 140°F (-40°C ~ 60°C)
Minimum Load	None
Maximum Load	Refer to ‘Derating Curve’

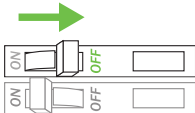
† Do not install product in an environment outside the listed ambient temperature.

Installation

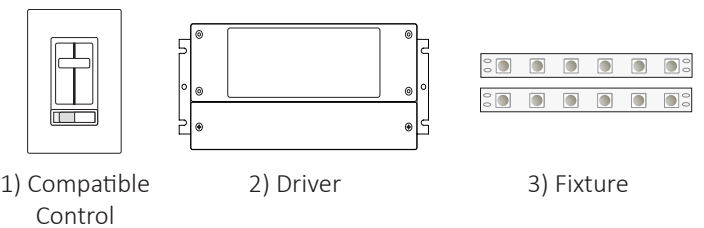
Prior to installation, ensure all components are a compatible system. Configure and pre-test your LED system prior to permanent installation to ensure all components are operating correctly. Install in accordance with the NEC and local regulations.

- 1 Turn OFF High Voltage AC Power at the main breaker.

**WARNING** Shock Hazard. May result in serious injury or death. Turn off power at circuit breaker before installing this product.



- 2 Determine Locations to Install 3 Main Components. Refer to the ‘System Diagrams.’



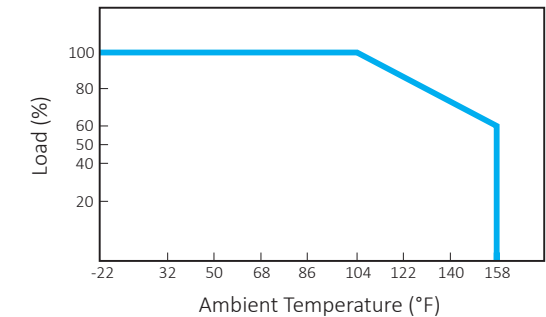
Ensure applicable wire is installed between driver, fixture, and any controls in between. When choosing wire, factor in voltage drop, amperage rating, and type (in-wall rated, wet location rated, etc.).

- 3 Mount Driver to Surface. See ‘Wiring Connections’ for mounting holes. Driver may be mounted in any orientation.

- 4 Attach Lighting Load and Control. Only use copper wiring. Refer to ‘Wiring Connections’, ‘System Diagrams’, and dimming control installation guides. Ensure to install a compatible dimming control listed on the ‘OMNIDRIVE® X Dimming Control Compatibility List’ available at www.DiodeLED.com.

- a. When installing in ambient temperatures that may reach over 100°F, refer to the ‘Derating Curve’ to avoid overheating and damage to the driver.

DERATING CURVE

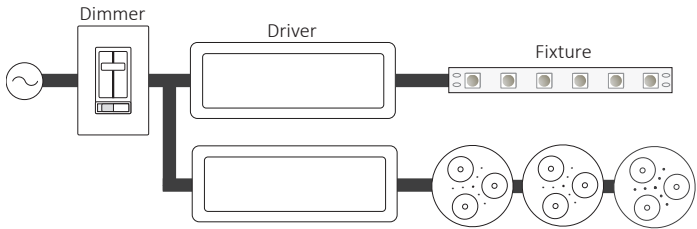
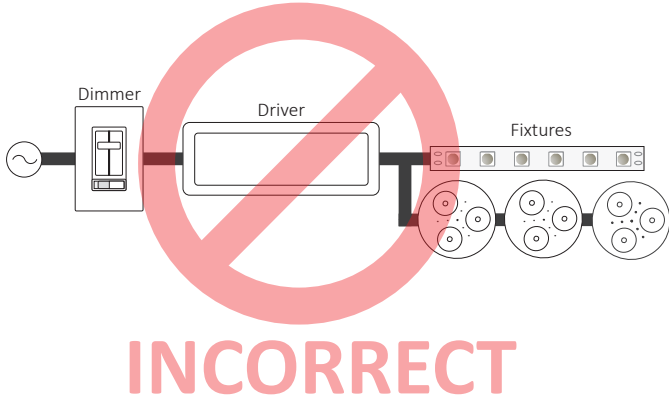


IG120423-4.0

Omnidrive® X Dimmable Hard Wired Driver

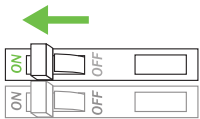
- 4 Continued

- b. All Models - Use applicable UL Listed wire nuts and junction box to secure wire connections.
- c. Do not install different fixture types on the same power supply as flickering and altered dimming range may occur.



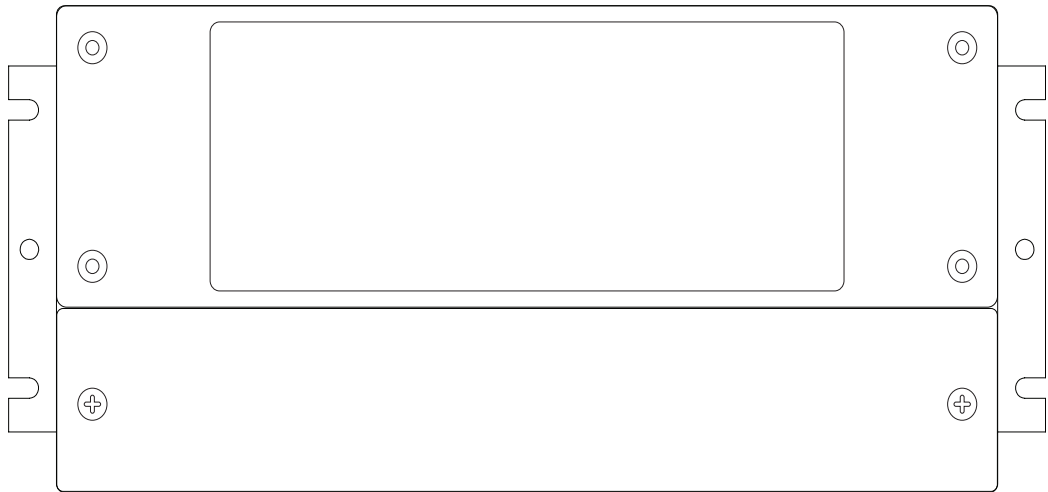
Different fixture types on separate drivers.

- 5 Install Additional Components, Verify connections, and Turn Main Power ON at Breaker.



If system remains unresponsive or is working improperly, turn OFF main power at breaker and verify all connections. Review the ‘Wiring Connections’, ‘System Diagrams’, and dimming control installation guides.

Mechanical Diagram



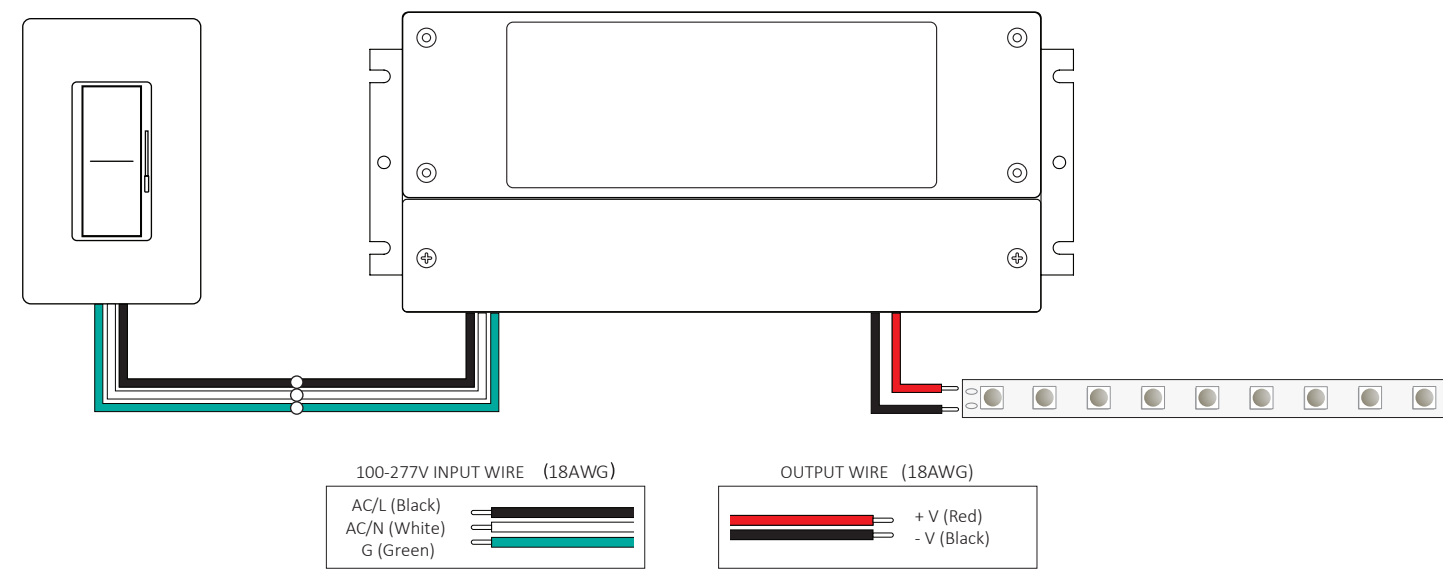
Wire caps must be removed from purple and pink wires for 0-10V installations. Wire caps must remain on purple and pink wires for all other installations.

Omnidrive® X Dimmable Hard Wired Driver

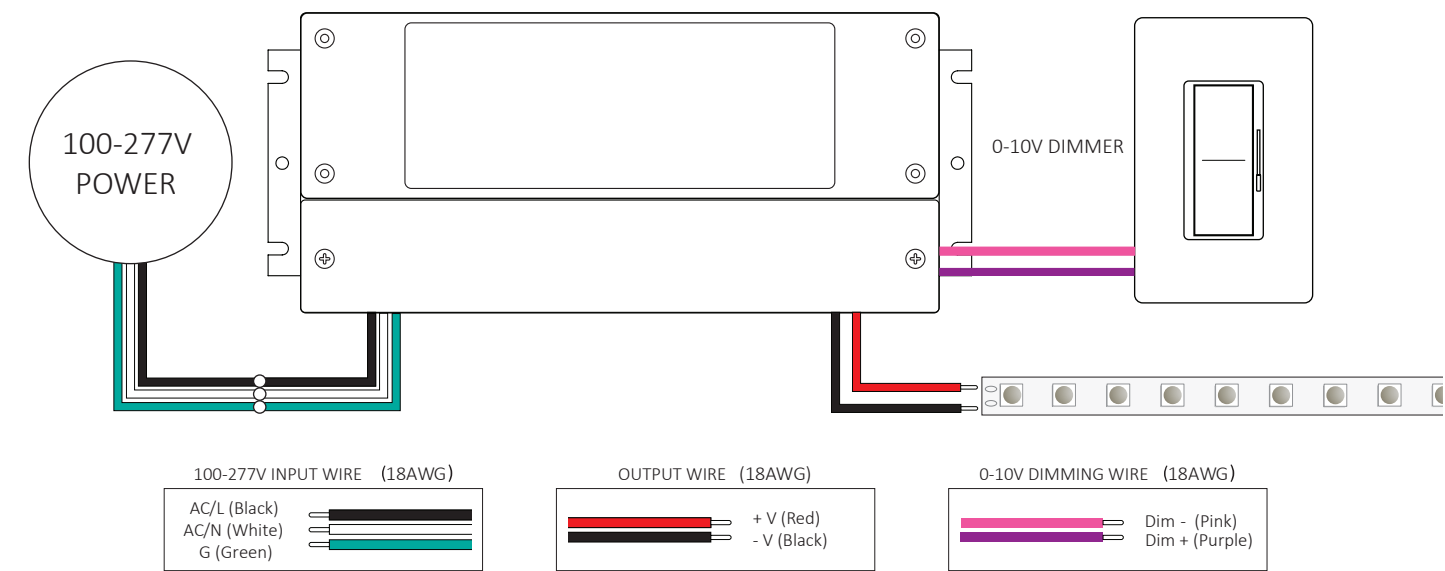
System Diagrams

The following diagrams are provided as example system designs. Always review each component installation guide for detailed and up-to-date wiring instructions. Install in accordance with NEC and local regulations.

OMNIDRIVE® X 2-Wire Dimming or ON/OFF Standard System Diagram



OMNIDRIVE® X 0-10V System Diagram (Dimmer with No Power Pack)



* If utilizing power pack, refer to third party manufacturer's Instruction Guide.

* Driver may not require a framed ground connection. Refer to driver specifications for additional information.

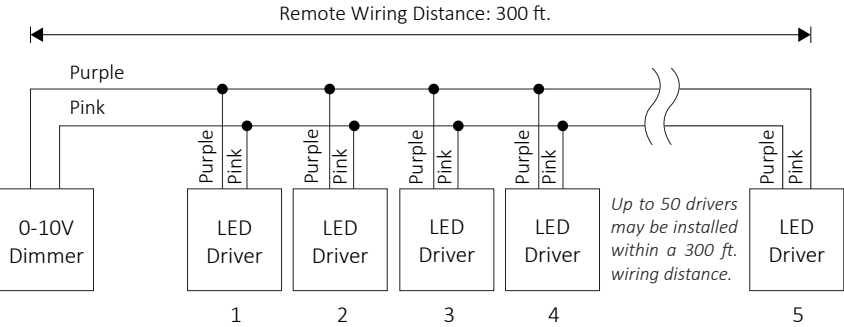
^ Install a compatible dimming control or switch. See the 'Electronic Dimmable Driver / Dimmer Compatibility List' for compatible dimming controls. See the dimming control manufacturer installation guide for complete wiring instructions.

‡‡ See fixture specifications for maximum series run limits.

Omnidrive® X Dimmable Hard Wired Driver

System Diagrams Cont'd

0-10V Dimmable Driver Large Install System Diagram (Example)



Troubleshooting

Fixture does not illuminate	- See 'System Diagram', 'Wiring Connections' and installation guides of all components. Ensure the system is wired correctly and polarities are correct. - Ensure a compatible constant voltage <i>dimmable</i> fixture is installed. - Ensure the driver and fixture have the same voltage specifications (12V & 12V, or 24V & 24V).
Fixture does not dim	- Ensure a compatible constant voltage <i>dimmable</i> fixture is installed. - Ensure a compatible dimming control is installed and wired correctly. See 'OMNIDRIVE® X / Dimming Control Compatibility List'.
Different fixture types do not dim in sync	Different fixture types have different circuit designs and may react differently when dimmed. Ensure each fixture type is installed on a separate dimmable driver for best performance.
Fixture is quickly flashing or flickering	- Verify a compatible dimming control is installed. If flickering is apparent at low light levels install a compatible trim-adjustable dimming control. - Ensure a compatible constant voltage <i>dimmable</i> fixture is installed. - Ensure different fixture types are not connected to a single driver. Different fixture types must be connected to individual drivers. - Ensure all connections are properly secured. - Ensure fixture is receiving the correct input voltage.
Fixture is slowly flashing	Ensure driver is not overloaded. An overloaded driver will cause the internal auto-reset to trip repeatedly.
Installation Trips Main Breaker	Check wiring for short circuit. If breaker continues to trip there may be a short in the driver. Call customer support for a replacement driver.

Additional Resources

Visit the online product page at www.DiodeLED.com for additional product specifications & warranty information.

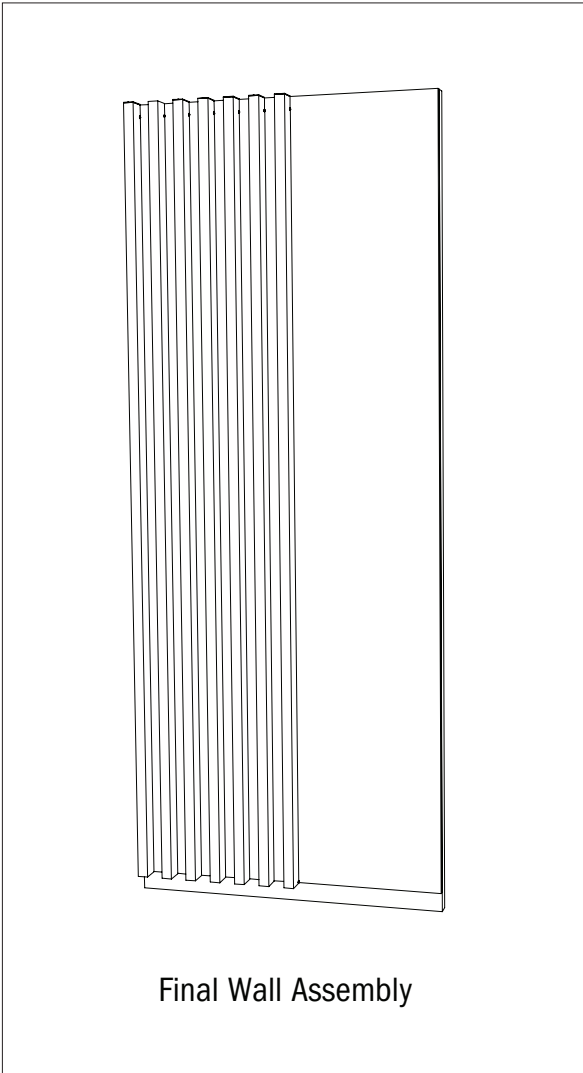
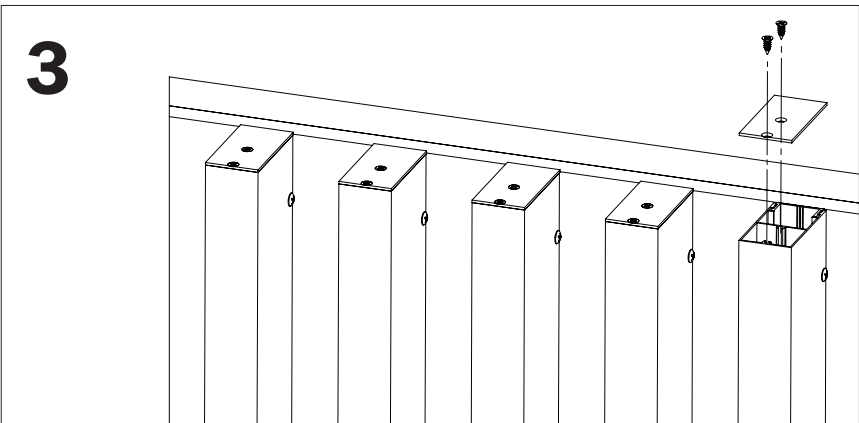
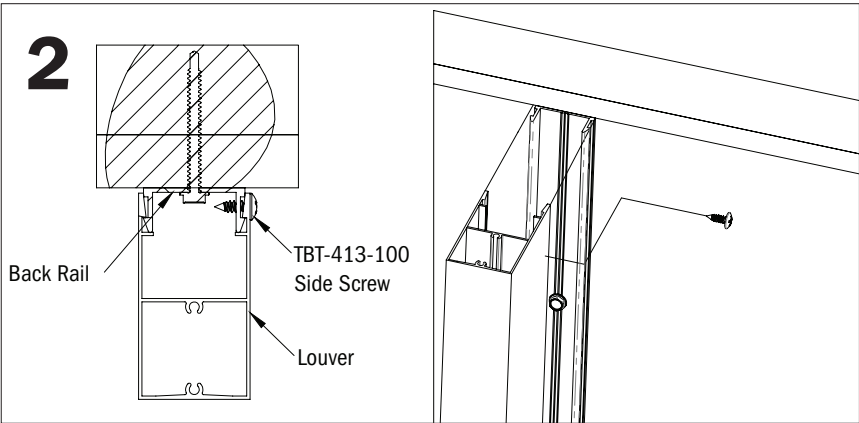
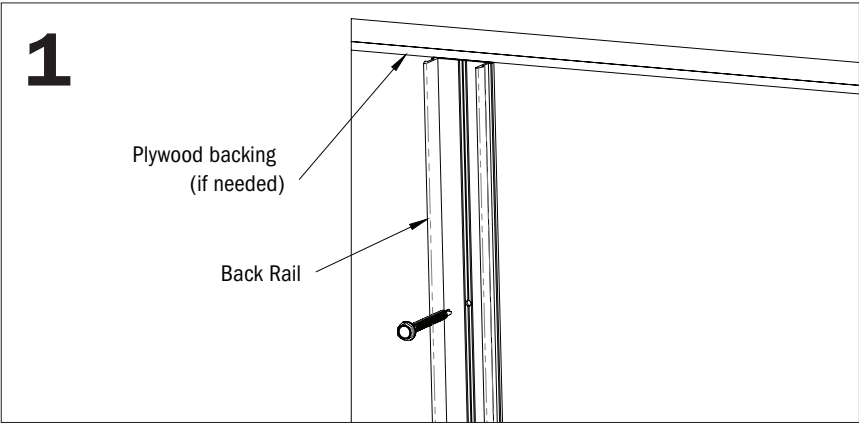
- OMNIDRIVE® X Specification Sheet**
For full specifications.
- OMNIDRIVE® X Dimming Control Compatibility List**
For compatible dimming controls.
- Voltage Drop Charts**
Use to specify appropriate wire gauge for installation. Available at the 'Tools & Resources' page at www.DiodeLED.com.

Fortina Battens > Wall and Ceiling > Direct Attachment > Interior/Exterior

STEP 1: Screw the back rail to the wall using appropriate mounting hardware. Screws should be located every 24" o.c. (Drill pilot holes as necessary).

STEP 2: Snap the louver onto the back rail and screw at least one side screw through the louver and back rail to prevent sliding (depending on spacing only one side of the louver may be accessible).

STEP 3: Attach the end caps and repeat previous steps to progressively install the wall.



Final Wall Assembly

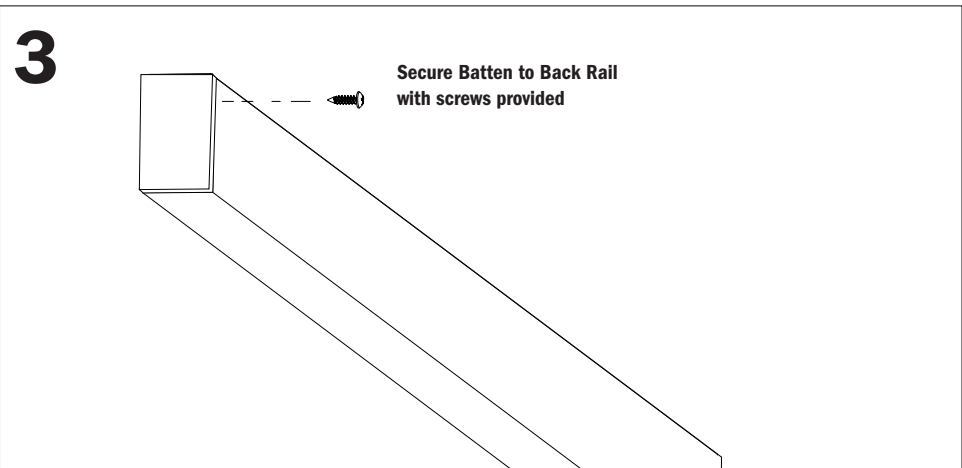
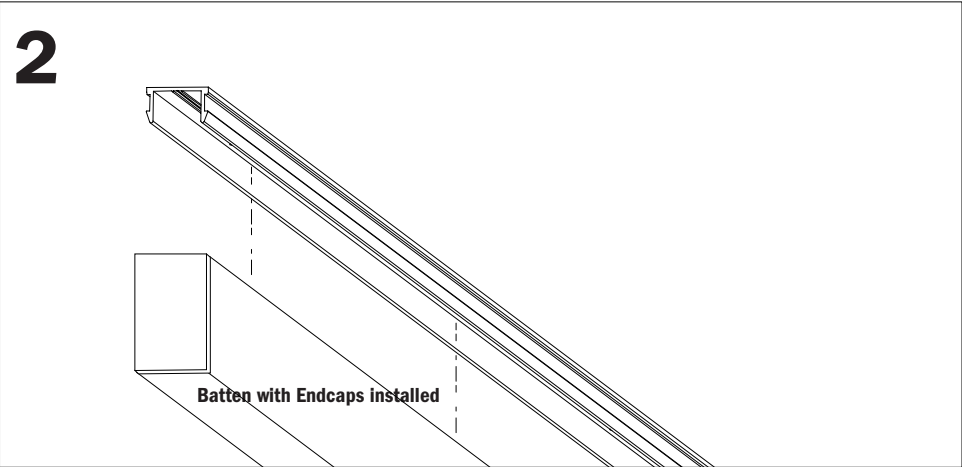
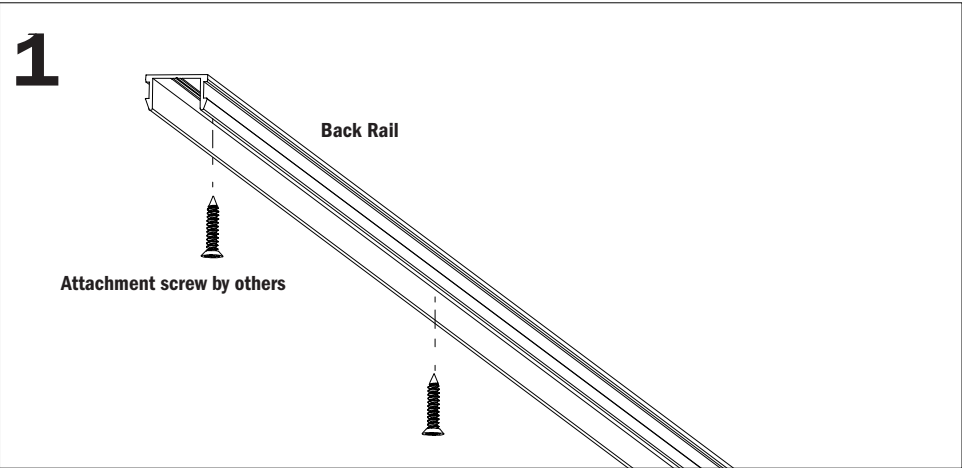
Fortina Battens > Ceiling (Soffit)

STEP 1: Attaching the Back Rail: Measure and mark the position of your Battens on the ceiling. Mark and drill pilot holes in the Back Rail in a diameter smaller than the screw you are using. Attach to ceiling at pre-marked locations.

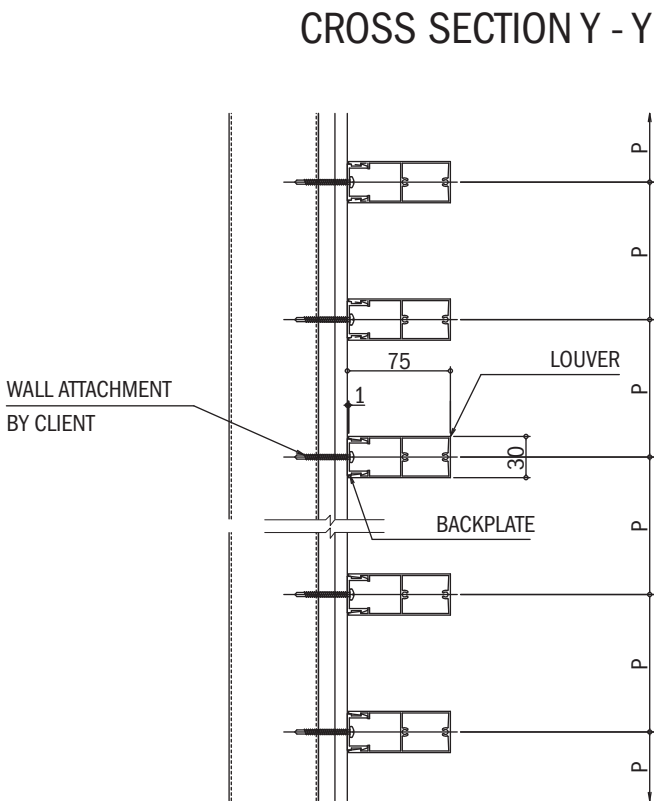
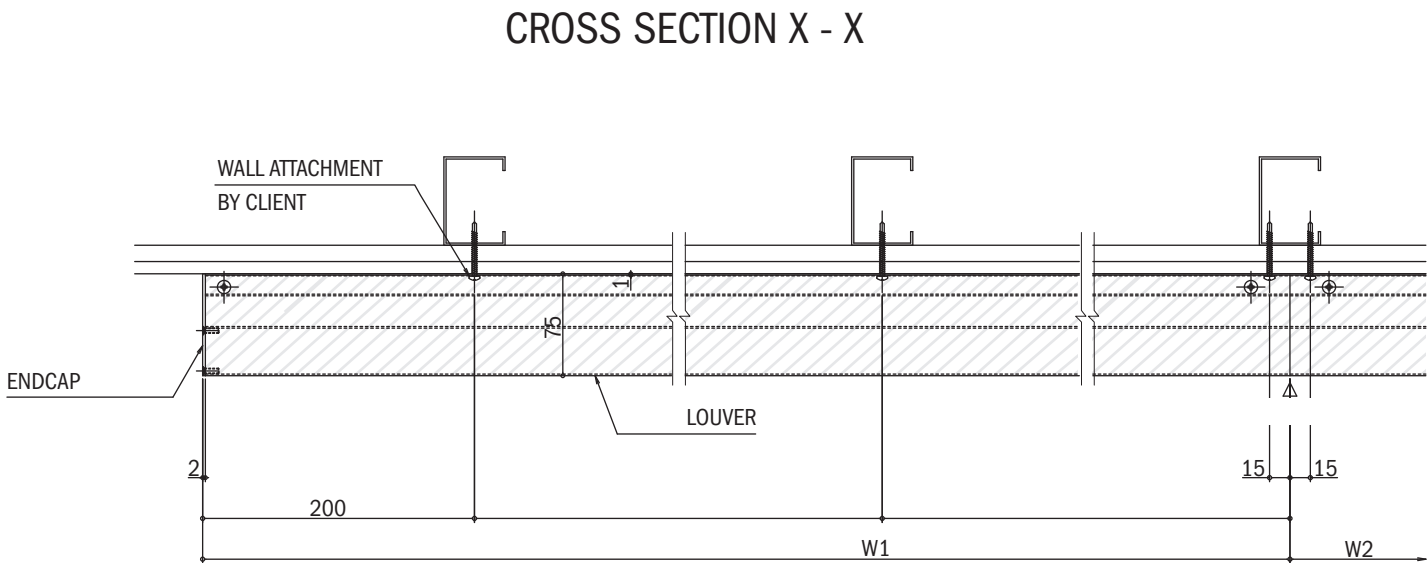
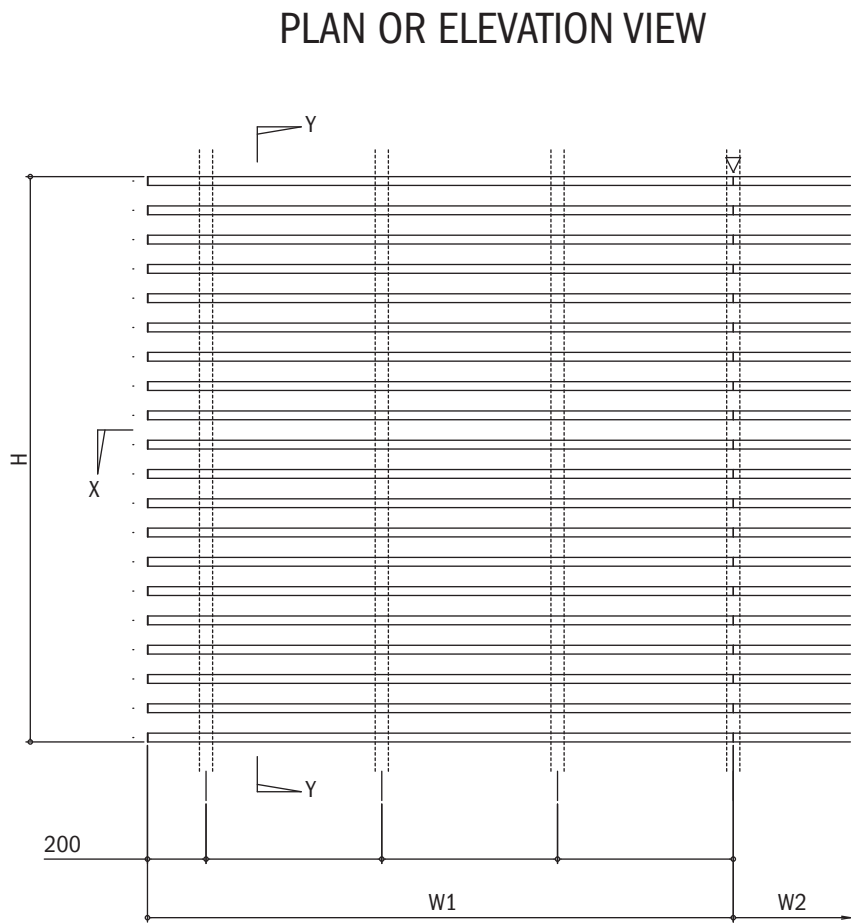
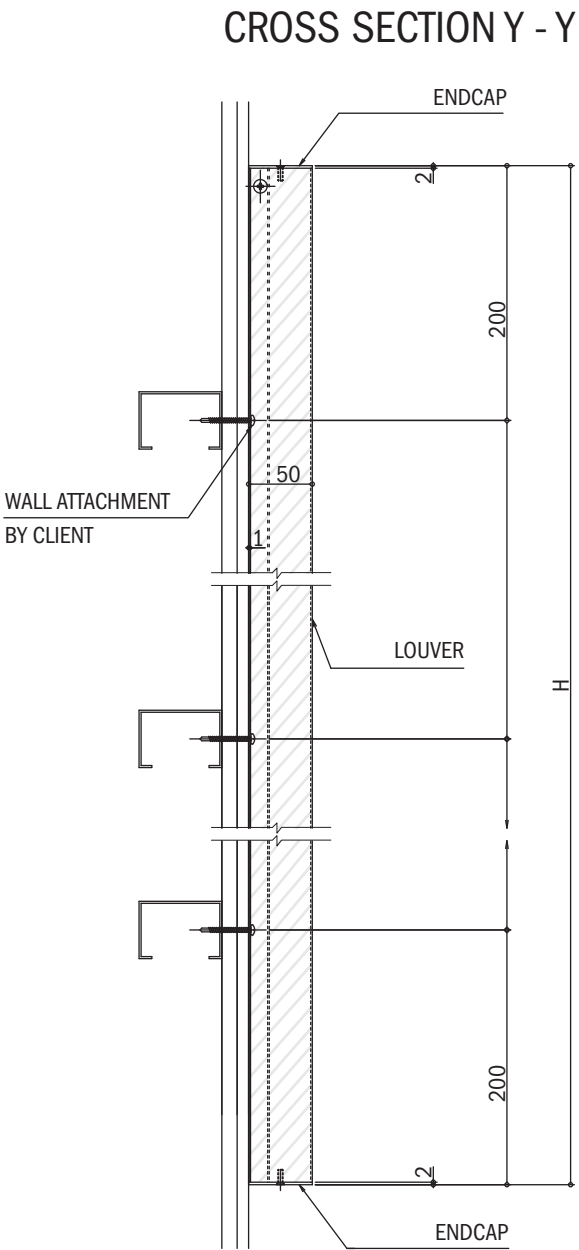
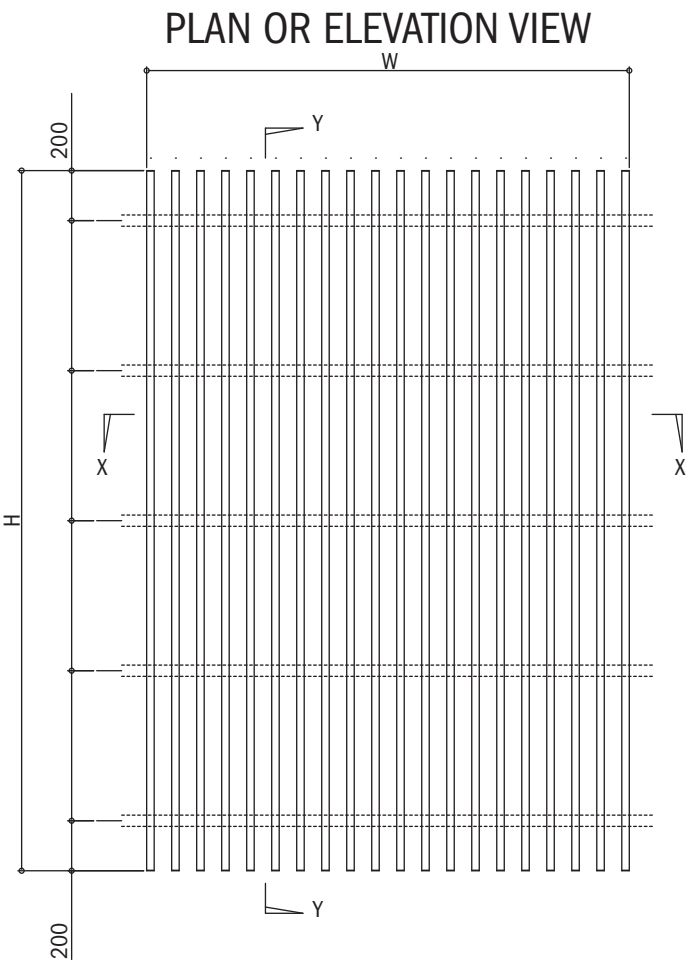
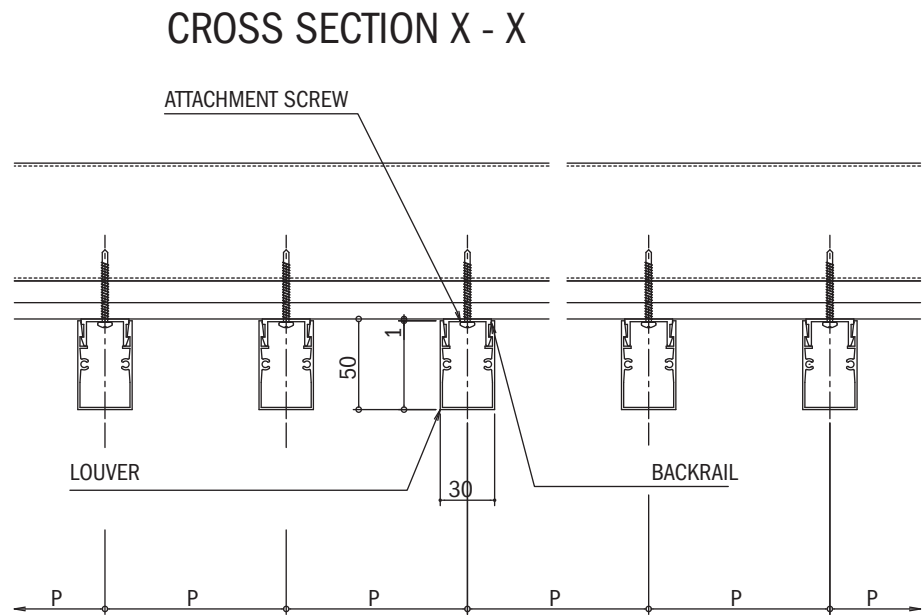
Attach Endcaps to the Battens with screws provided, as shown on the next page, before installing the Battens.

STEP 2: Install the Batten by snapping into the Back Rail.

STEP 3: Secure the Batten to the Back Rail with a screw through the side.



Interior Wall And Ceiling Direct Applications > Installation Examples

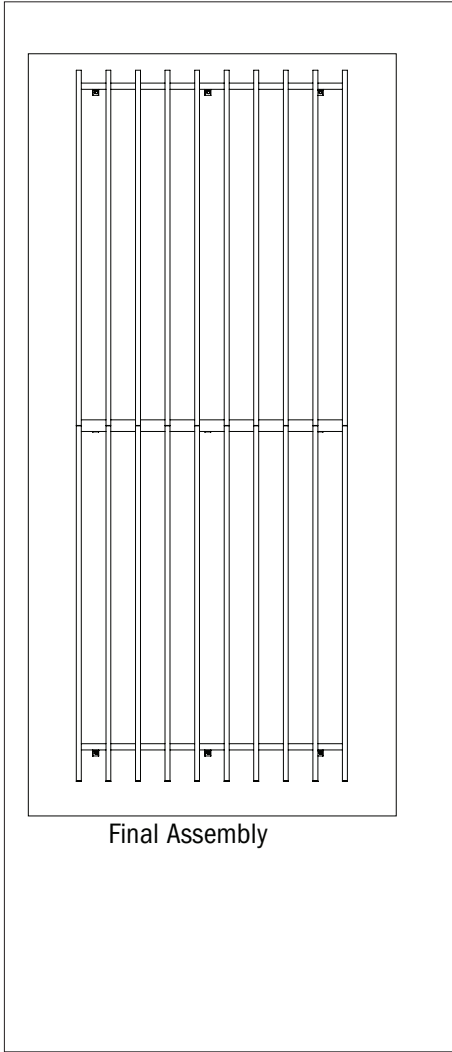
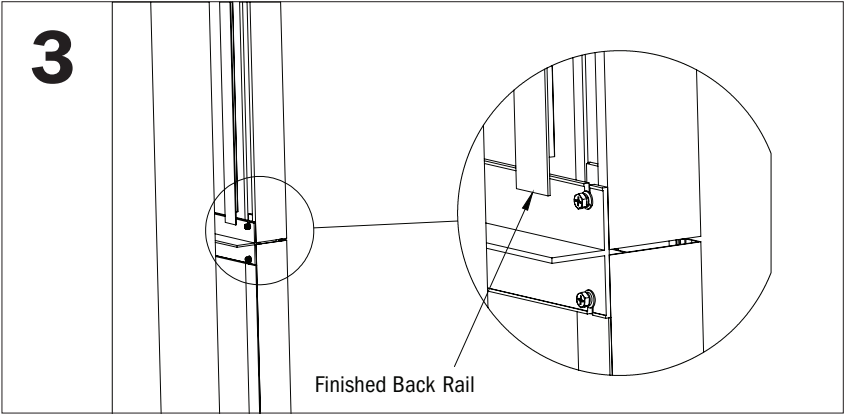
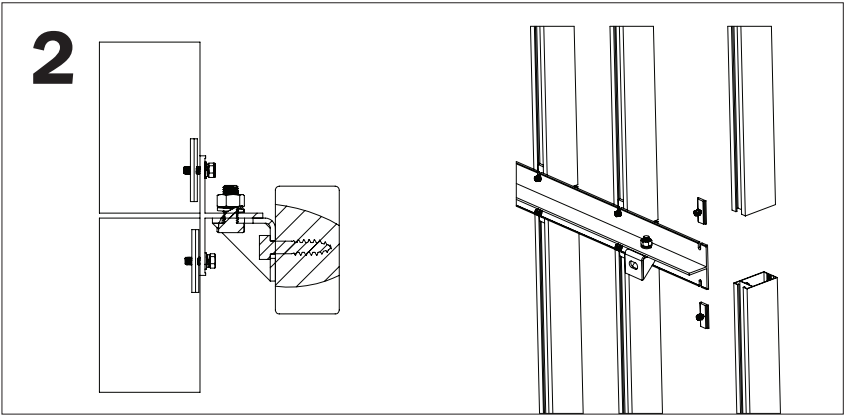
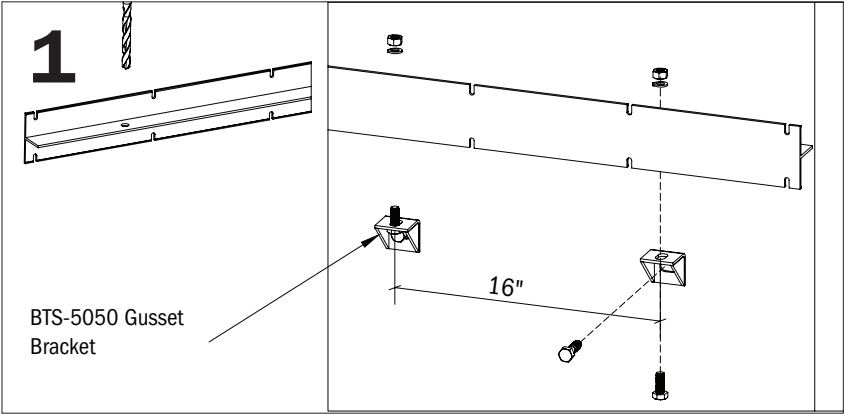


Fortina Battens > Wall > Stringer Mounted > Interior/Exterior

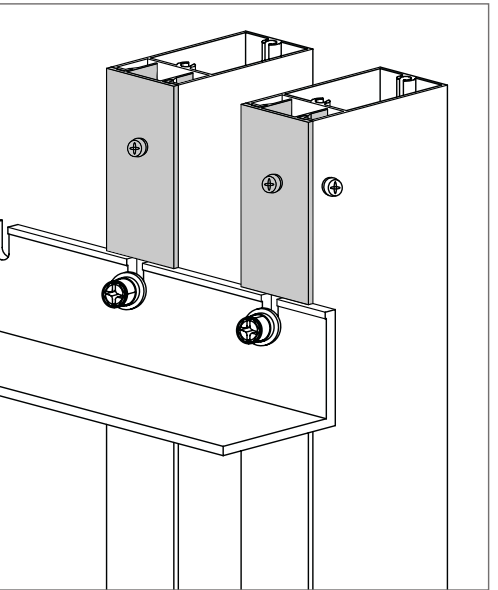
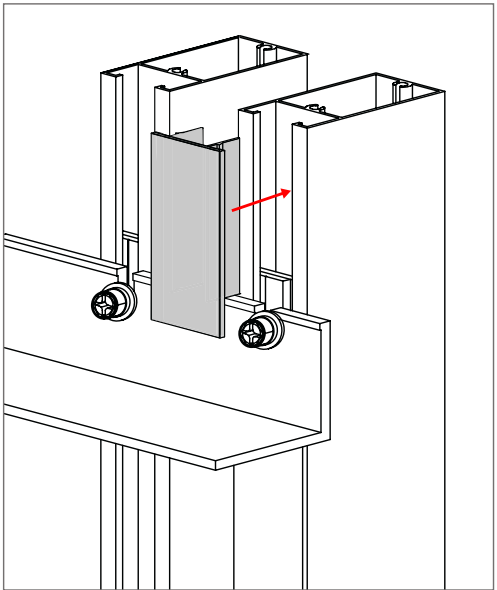
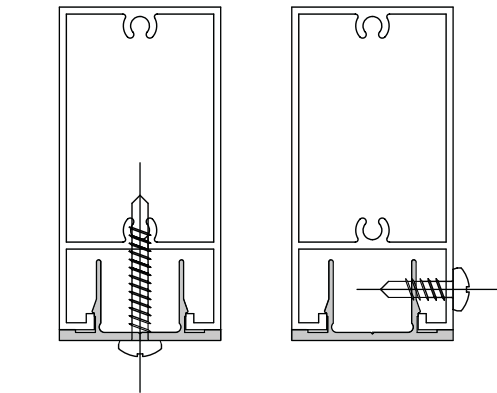
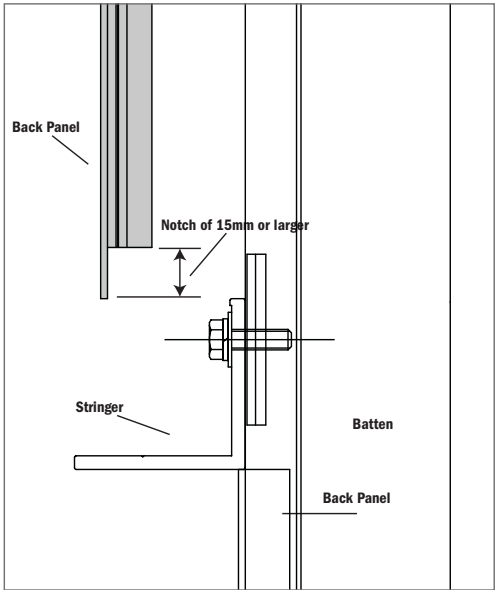
STEP 1: Locate the BTS-5050 Gusset brackets at 16" on center along the stringer length. Drill clearance holes in the stringer for Ø1/2" bolts to mount to the BTS-5050 Gusset Brackets. Secure the brackets to the wall using anchor hardware appropriate to the wall material (Brackets fit Ø1/2" bolt maximum). Repeat process until all required stringer support has been installed on walls according to elevations.

STEP 2: Install the louvers by positioning them at the correct height and spacing as dictated by the pre-notched stringers. Slot the BTP clip into the open channel at the back of the louver, and seat it into the notch in the louver. Fully tightening the bolt on the T-Nut will engage the thread locking compound.

STEP 3: Finish the installation by snapping or screwing on end caps and pressing back rails into the open back channel if the back side of the louver is visible. The back rail mounting flanges may need to be trimmed to avoid the BTP Clips.



Fortina Battens > Wall > Stringer Mounted > Interior/Exterior



Follow instructions mounting Battens to Stringers.

Cut a 15 mm or larger notch at Back Rail to clear installed BTP clip.

Secure Back Rails to Battens with screws through back or sides, as shown at left.

Attach Endcaps to the Battens with screws provided, as shown on the next page.

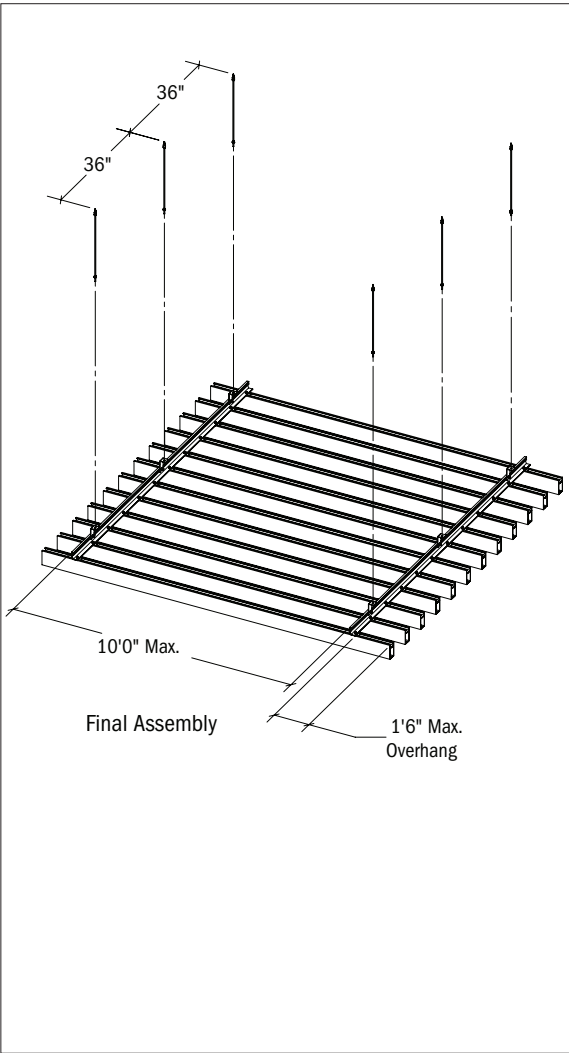
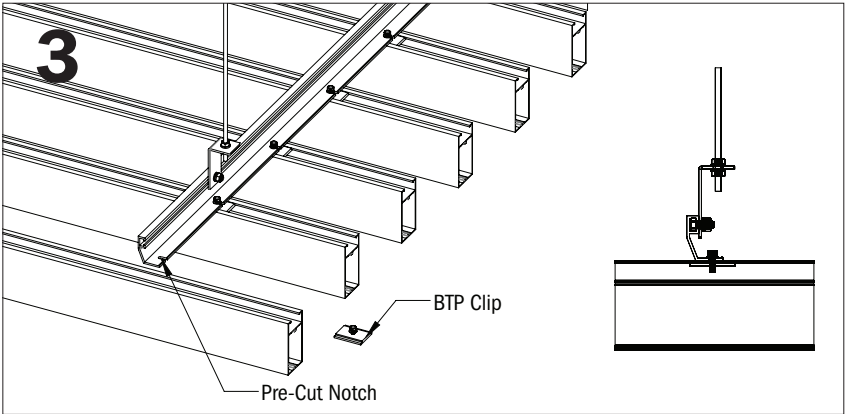
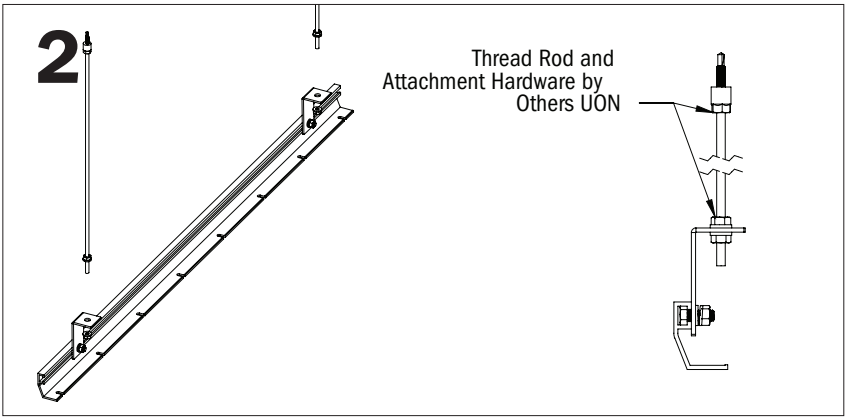
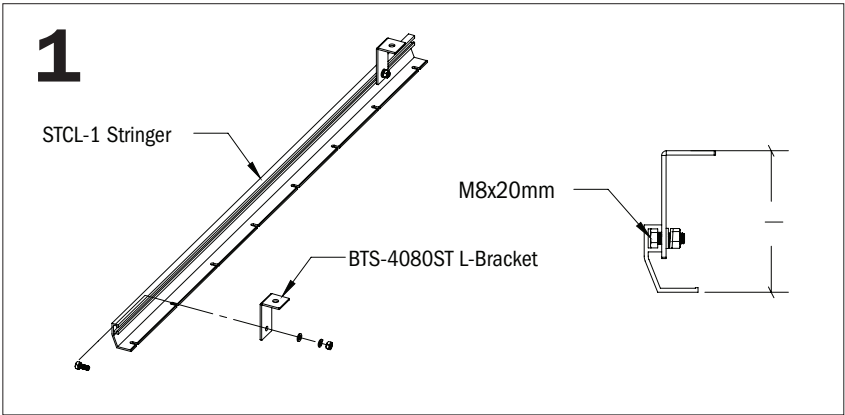


Fortina Battens > Ceiling > Stringer Mounted > Interior Only

STEP 1: Slide the included M8 Bolt into the C-shaped track of the stringer so that the head is in the track and the threads stick out. Attach the L-Brackets as shown no more than 36" apart along the length of the stringer.

STEP 2: Locate threaded rod supports in the ceiling blocking every 36". The L-Bracket supports up to Ø3/8" rod. Guide the thread rod through the hole in the bracket and thread on a nut/washer from underneath to support it.

STEP 3: Starting at one end of the stringer, attach the louvers by sliding the BTP T-Nut into the open channel of the louver, aligning the bolt with the pre-cut notch. Note that the panels may also be pre-assembled on the ground and hoisted up to supporting rods.

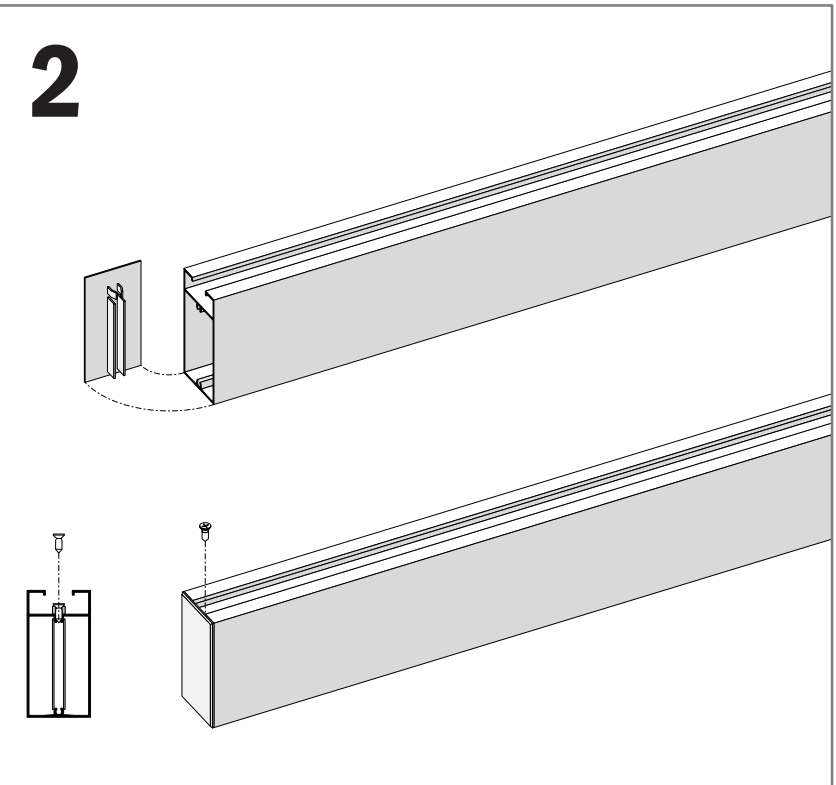
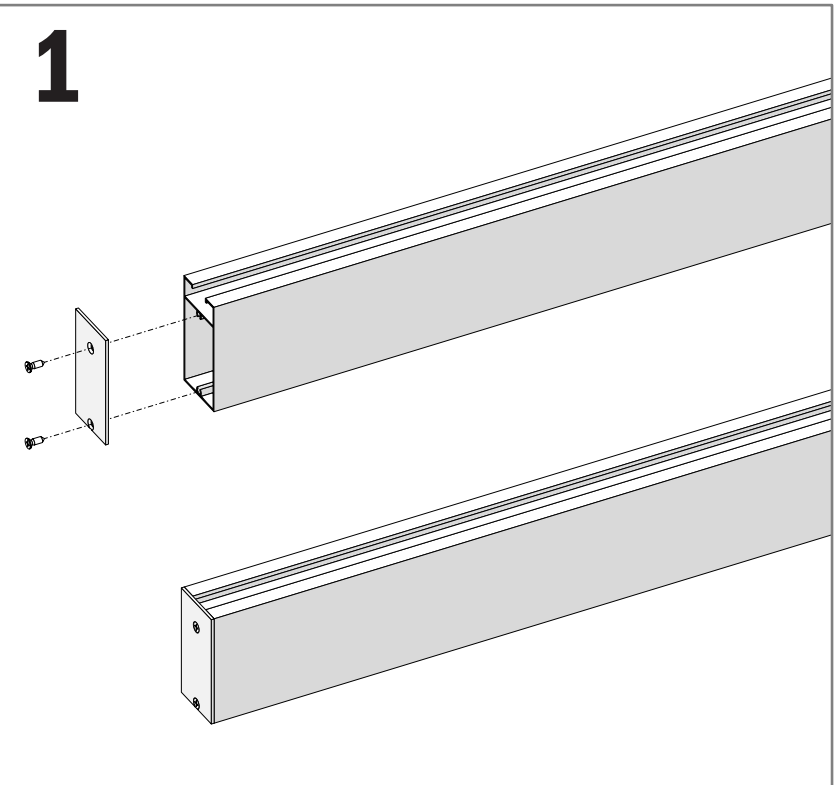


Fortina Battens > Endcaps

1. SCREW-ON Endcap
For all direct attachment TLKS- Battens and all THS-/THSN- Battens

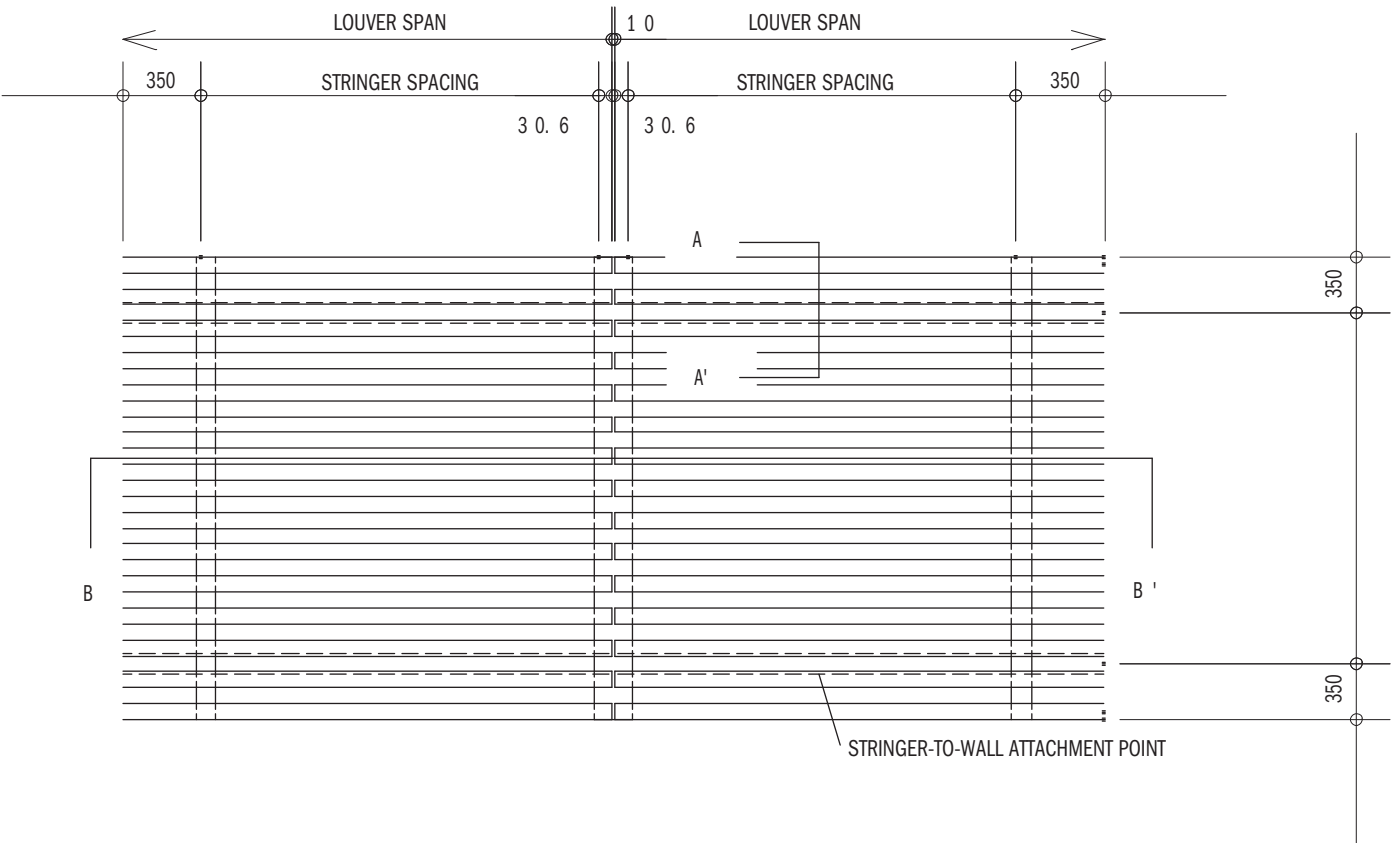
2. SNAP-ON Endcap
For all THS-/THSN- Battens and select direct attachment TLKS- Battens only. See pages 58-59 for the list of direct attachment TLKS Battens.

On exterior vertical installation, drill two small weep holes on the bottom Endcaps. This will allow for any trapped moisture to drain.

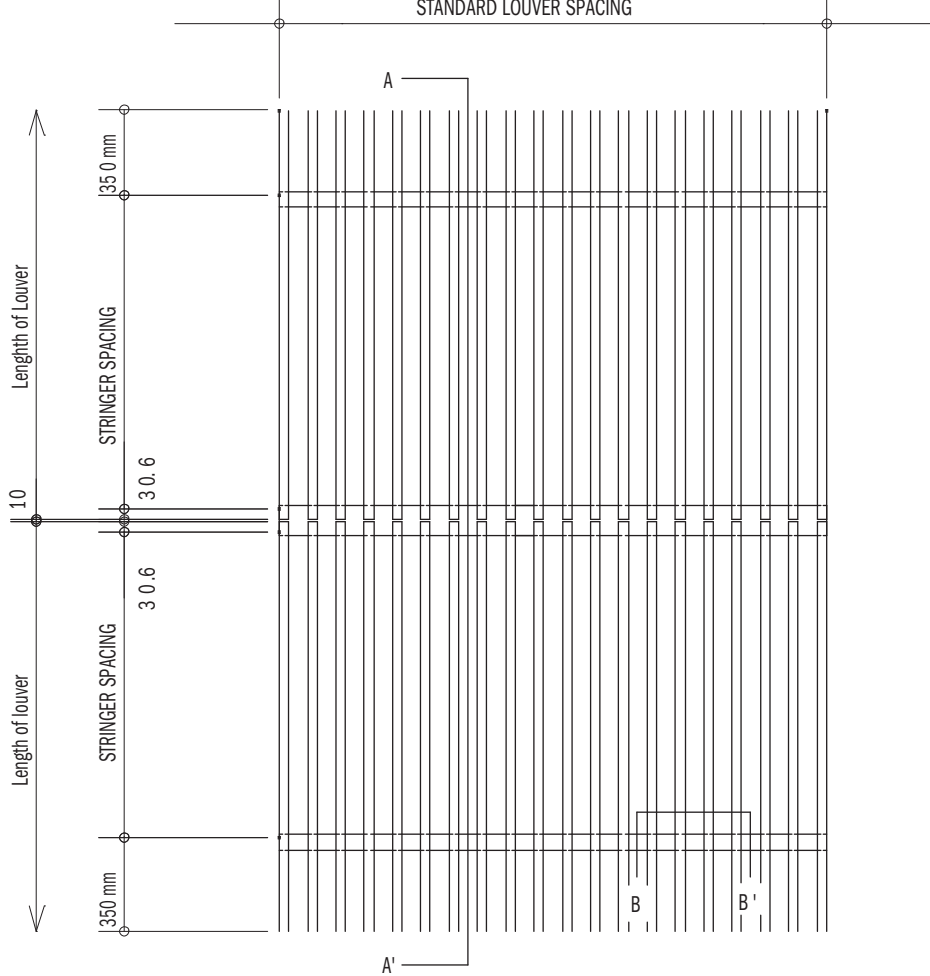


Interior and Exterior Wall Applications With Stringers > Installation Examples

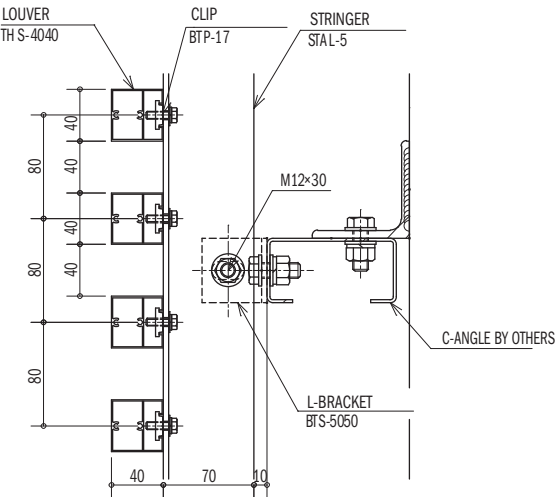
Interior or Exterior Wall Stringer Application > Horizontal
ELEVATION



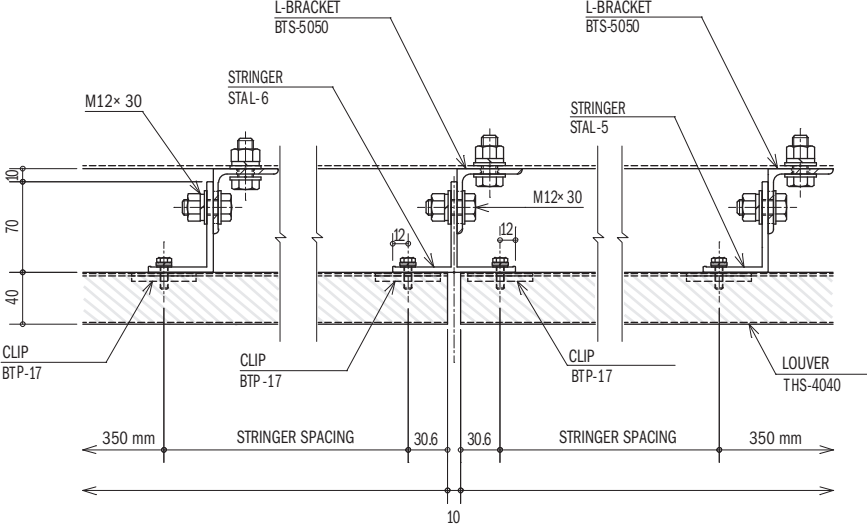
Interior or Exterior Wall Stringer Application > Vertical
ELEVATION



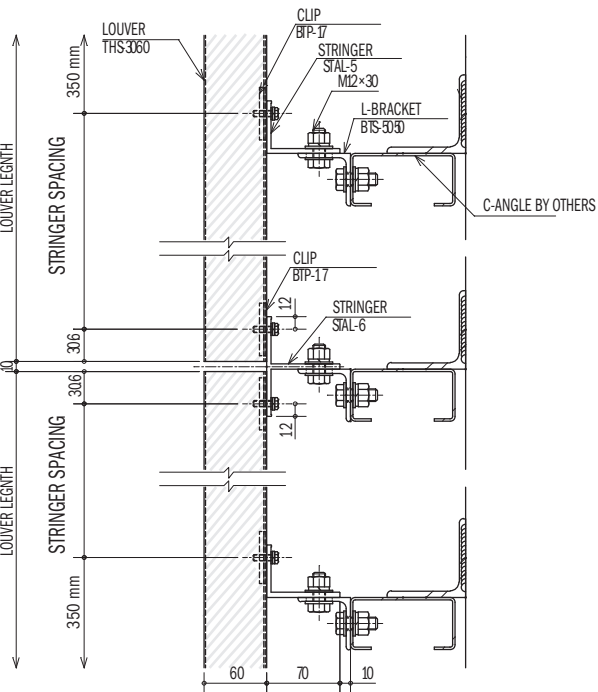
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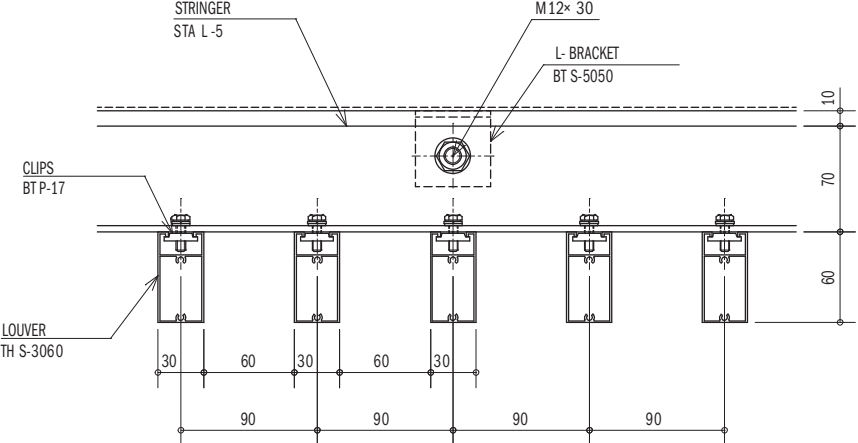
CROSS SECTION B - B



CROSS SECTION A - A

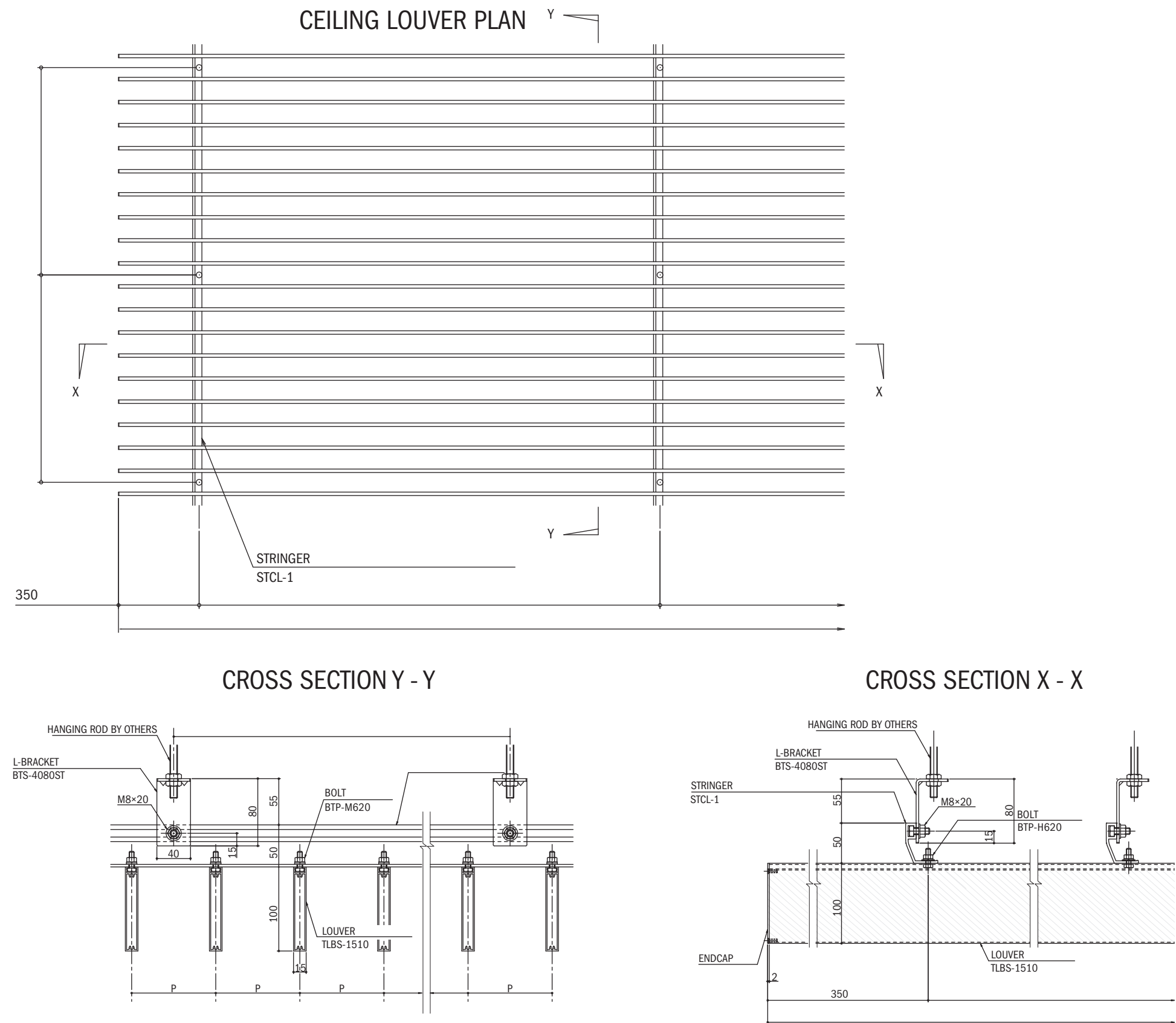


CROSS SECTION B - B

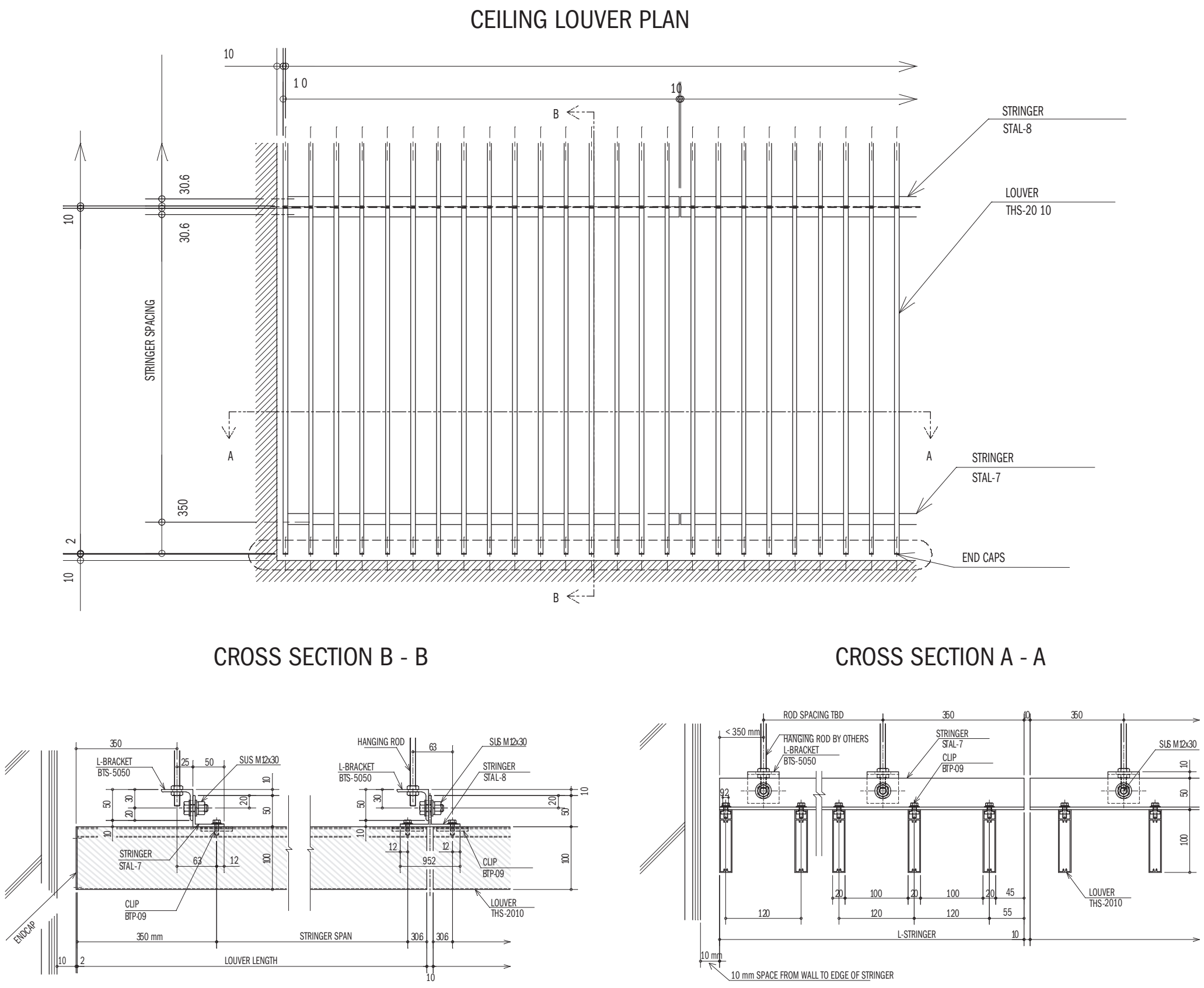


Interior Ceiling Applications With Stringers > Installation Examples

Interior Ceiling Installation With STCL Stringer



Interior Ceiling Installation With STCL Stringer

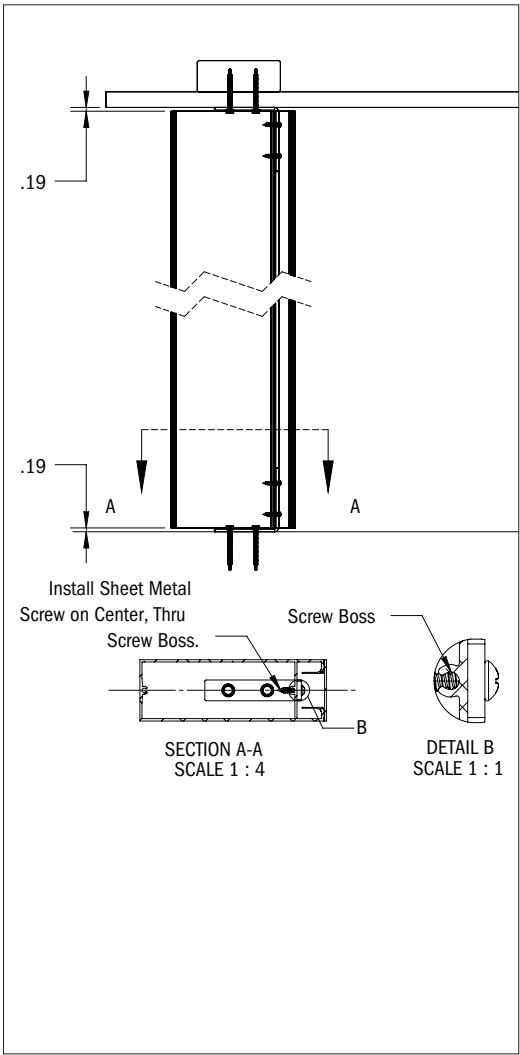
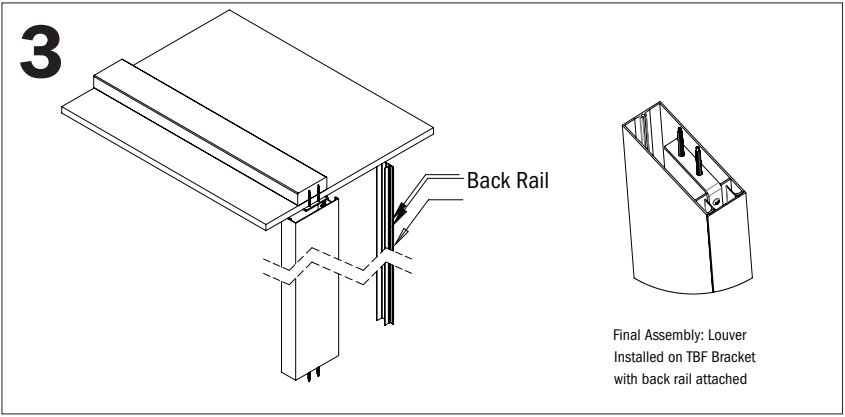
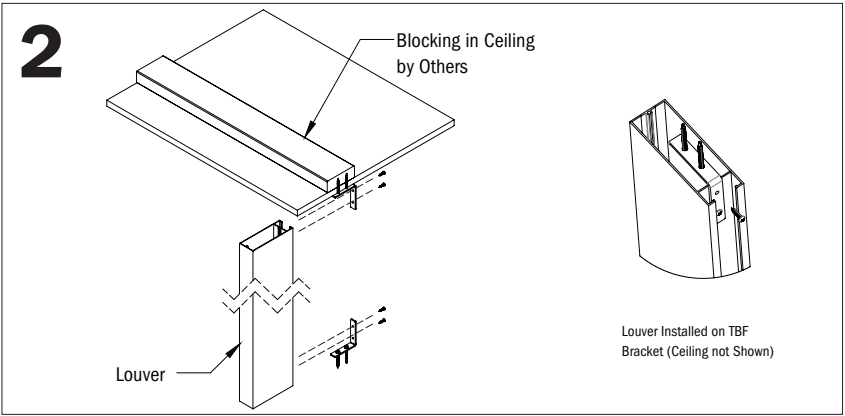
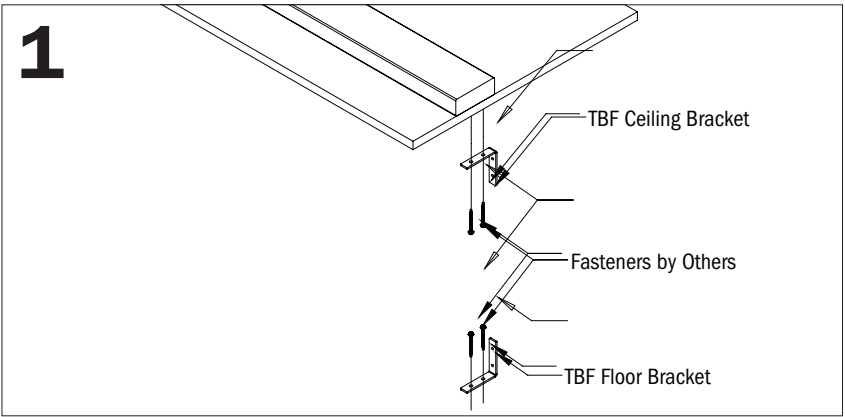


Fortina Battens > Floor To Ceiling > Interior Only

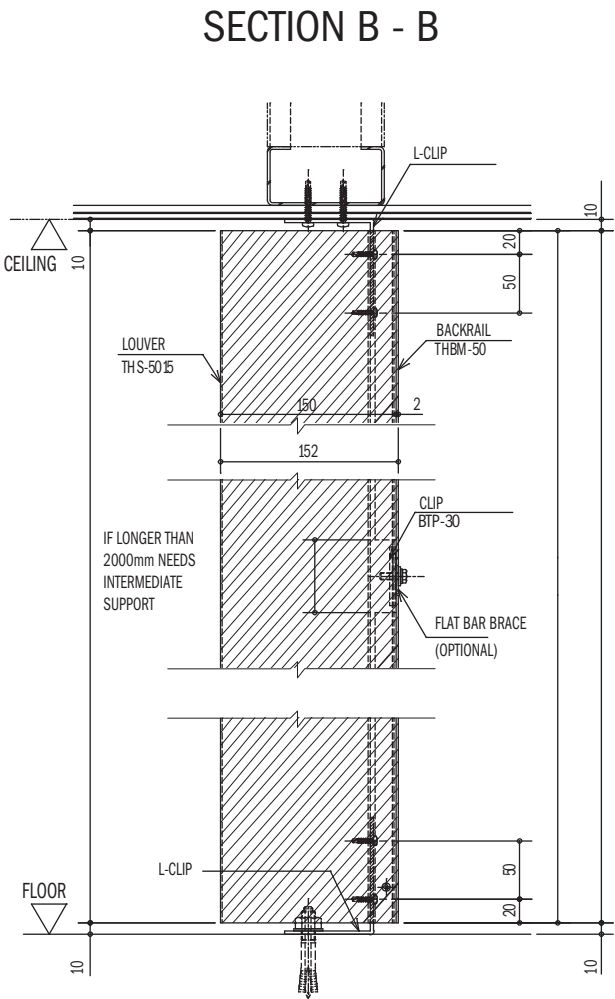
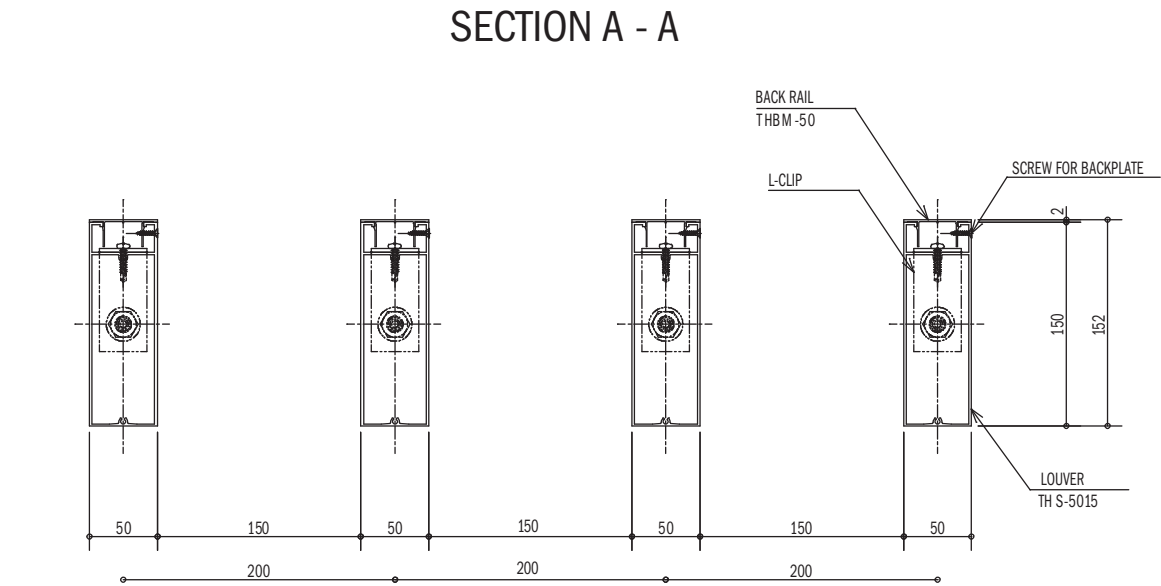
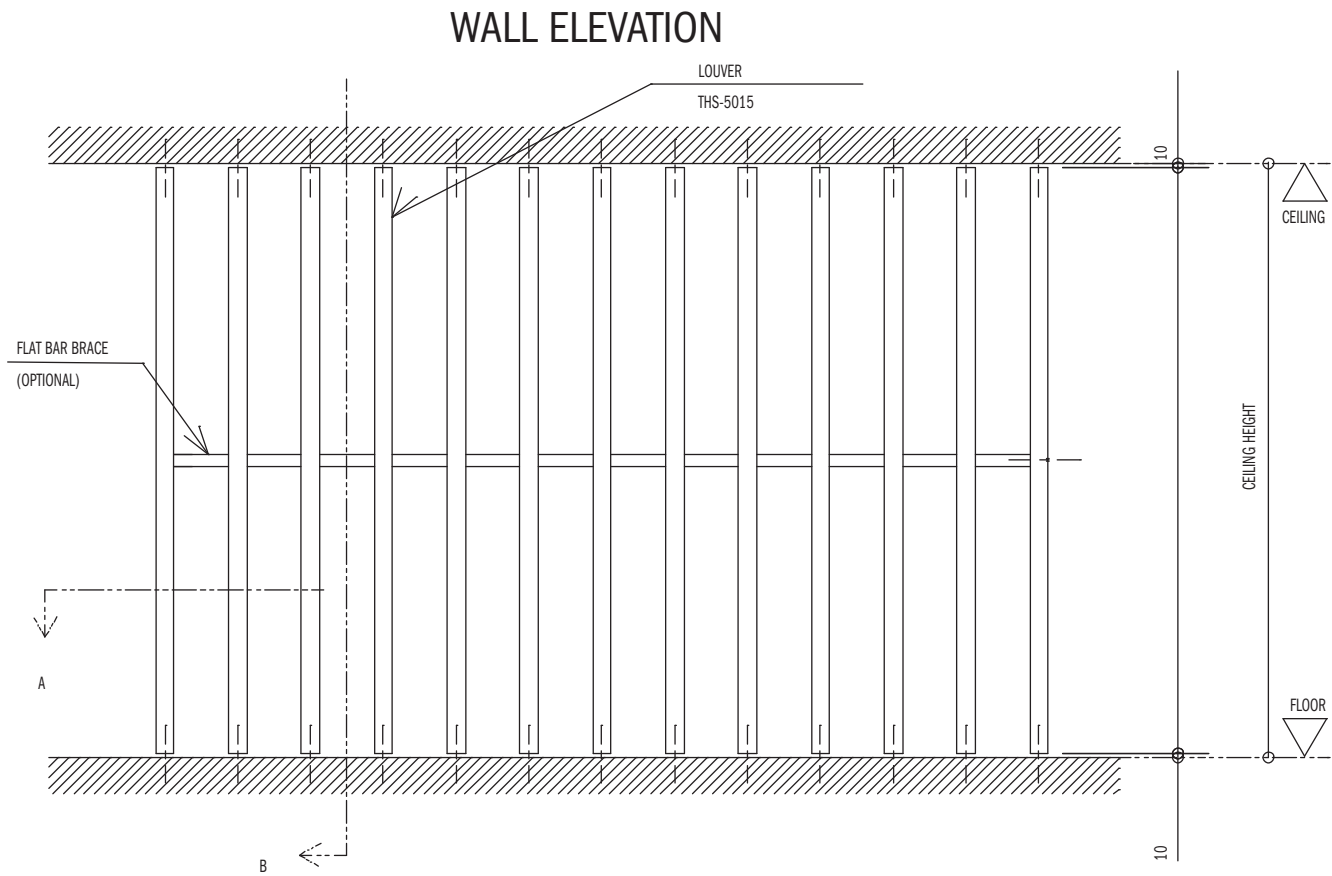
STEP 1: Mount TBF Brackets to floor and ceiling with appropriate blocking and hardware.

STEP 2: Slide the open channel of the louver over the brackets. The louver should be 3/8" shorter than the measured floor to ceiling height to allow clearance for the brackets. Using the brackets as a guide, drill pilot holes centered on the louver going through the screw boss. Use two #8 sheet metal screws to secure the louver to the bracket at both the ceiling and the floor.

STEP 3: Once the louver is securely fastened, the back rail may be snapped into place by hand.



Fortina Battens > Floor To Ceiling > Interior/Exterior> Installation Examples



NOTE: 10MM SPACE TOP AND BOTTOM FOR L-CLIP THICKNESS.

TECHNICAL INFORMATION

VALENT® X HIGH-DENSITY LED TAPE LIGHT

Precision-engineered, high-density tape light for demanding applications when light quality matters most. Up to 900+ lumens per foot with 95+ CRI/90+ R9.



DI	VOLTAGE	MODEL	LUMEN SERIES	CCT	LENGTH
DI	24V (24VDC)	VLX	1 (100 Lumen Range) 2 (200 Lumen Range) 3 (300 Lumen Range) 5 (500 Lumen Range) 8 (800 Lumen Range)	20 (2000K) 35 (3500K) 22 (2200K) 40 (4000K) 24 (2400K) 50 (5000K) 27 (2700K) 63 (6300K) 30 (3000K)	016 (16.4 ft.) 100 (100 ft.)

EXAMPLE: 24V VALENT® X 800 LUMENS 5000K 16.4 FT. SPOOL = DI-24V-VLX8-50-016

24VDC					
	100 LUMEN RANGE VLX1 Max. Run: 80 ft. Cut Points: 1.32 in. Wattage: 1.0W/ft.	200 LUMEN RANGE VLX2 Max. Run: 53 ft. Cut Points: 1.32 in. Wattage: 1.9W/ft.	300 LUMEN RANGE VLX3 Max. Run: 41 ft. Cut Points: 1.32 in. Wattage: 2.8W/ft.	500 LUMEN RANGE VLX5 Max. Run: 30 ft. Cut Points: 1.32 in. Wattage: 4.6W/ft.	800 LUMEN RANGE VLX8 Max. Run: 19 ft. Cut Points: 1.32 in. Wattage: 7.2W/ft.
CCT	Lumens/ft.	Lumens/ft.	Lumens/ft.	Lumens/ft.	Lumens/ft.
2000K	104	194	299	-	-
2200K	104	194	299	-	-
2400K	104	194	299	469	730
2700K	101	207	311	495	782
3000K	106	218	323	557	853
3500K	108	218	328	586	906
4000K	112	228	342	534	806
5000K	116	242	365	592	840
6300K	112	244	363	578	924

TECHNICAL INFORMATION

VALENT® X HIGH-DENSITY LED TAPE LIGHT

Specification Sheet

VALENT® X HIGH-DENSITY LED TAPE LIGHT

Precision-engineered, high density tape light for demanding applications. Up to 900+ lumens per foot with 95+ CRI / 90+ R9. 12 year warranty.

Date

Project Name

12
Year
Warranty

IP20

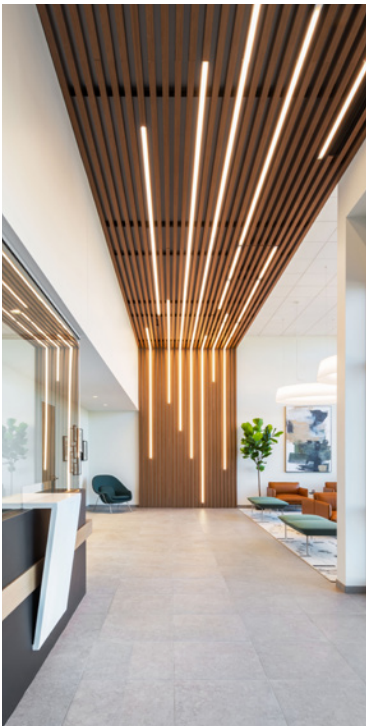
24
VDC

NEC
MARKING
CLOSELY RATED

TITLE
24

FEATURES													
• Dense LED placement for uninterrupted linear light • 100/200/300/500/800 lumen outputs • 95+ CRI • 1.32 inch cuttable increments • Precision color rendering with 90+ R9 value • Channel (extrusion) not required for heat sink • 12 Year limited warranty													
ORDERING CODES				OPTIONAL ORDERING CODES									
Order spools, and components for field assembly				Add Length, Assembly Preferences, and Finish									
DI	VOLTAGE	MODEL	CCTW	LENGTH	CHANNELS		FINISH	MOUNTING		DRIVER		DELIVERY	
DI	24V	VLX1	24 (2400K) 40 (4000K)	016 (16.4 feet)	S1 (S1) 16 (16mm Square) 45DCO (45° Deco)	MI1 (2-inch Mud-In)	AL (Aluminum)	3M (3M Adhesive)	VC (Vertical Clip)	ELV (Electronic)	LUT (Lutron)	Field Assembly	
		VLX2	27 (2700K) 50 (5000K)	100 (100 feet)	S2 (S2) RC20 (20mm Round) 90 (90° Sideview)	REC (Recessed)	BL (Black)	MC (Mounting Clip)	HNG (Hanging Hardware)	VLM (Constant Voltage)	SWX (Switchex)	Factory + Field (Hybrid)	
		VL3	30 (3000K) 63 (6300K)		S4S (S4S) SQ20 (20mm Square)	REF (Reflector)	WF (Waveform)	UC (U-Clip)	RC (Rotating Clip)	O/O (On/Off)	PoE (Power Over Ethernet)	Factory Assembly	
		VLX5	35 (3500K)		SL (Slim) SQ (Square)	ROD (Rod)	WH (White)						
		VLX8			CA (Canal) 45 (45°)	MI1 (1-inch Mud-in)							

24V VALENT® X SPECIFICATION TABLE					
MODEL	24V-VLX1	24V-VLX2	24V-VLX3	24V-VLX5	24V-VLX8
VOLTAGE	24VDC	24VDC	24VDC	24VDC	24VDC
WATTAGE	1W/ft.	1.9W/ft.	2.8.W/ft.	4.6W/ft.	7.2W/ft.
2400k	104 Lm/ft.	194 Lm/ft.	299 Lm/ft.	469 Lm/ft.	730 Lm/ft.
2700k	101 Lm/ft.	207 Lm/ft.	311 Lm/ft.	495 Lm/ft.	782 Lm/ft.
3000k	106 Lm/ft.	218 Lm/ft.	323 Lm/ft.	557 Lm/ft.	853 Lm/ft.
Lumens 3500k	108 Lm/ft.	218 Lm/ft.	328 Lm/ft.	586 Lm/ft.	906 Lm/ft.
4000k	112 Lm/ft.	228 Lm/ft.	342 Lm/ft.	534 Lm/ft.	806 Lm/ft.
5000k	116 Lm/ft.	242 Lm/ft.	365 Lm/ft.	592 Lm/ft.	840 Lm/ft.
6300k	112 Lm/ft.	244 Lm/ft.	363 Lm/ft.	578 Lm/ft.	924 Lm/ft.
Cut Points	1.32 in.	1.32 in.	1.32 ft.	1.32 ft.	1.32 ft.
Max Run (ft.)	80 ft.	53 ft.	41 ft.	30 ft.	19 ft.
Max Run (Class 2)	80 ft.	53 ft.	41 ft.	25 ft.	14 ft.
CRI	95+	95+	95+	95+	95+
Dimensions	0.47 x 0.1 in. (W x H)	0.47 x 0.1 in. (W x H)	0.47 x 0.1 in. (W x H)	0.47 x 0.1 in. (W x H)	0.47 x 0.1 in. (W x H)
TM-30 (LM-80)	>50,000 hours	>50,000 hours	>50,000 hours	>50,000 hours	>50,000 hours
Environment	Indoor / Damp Location (IP20)	Indoor / Damp Location (IP20)	Indoor / Damp Location (IP20)	Indoor / Damp Location (IP20)	Indoor / Damp Location (IP20)
Ambient Temperature	-4 ~ 122°F (-20 ~ 50°C)	-4 ~ 122°F (-20 ~ 50°C)	-4 ~ 122°F (-20 ~ 50°C)	-4 ~ 122°F (-20 ~ 50°C)	-4 ~ 122°F (-20 ~ 50°C)
Operating Temperature	-4 ~ 176°F (-20 ~ 80°C)	-4 ~ 176°F (-20 ~ 80°C)	-4 ~ 176°F (-20 ~ 80°C)	-4 ~ 176°F (-20 ~ 80°C)	-4 ~ 176°F (-20 ~ 80°C)
LED Chips	72/ft.	72/ft.	72/ft.	72/ft.	72/ft.
Chip Type	2835	2835	2835	2835	2835
Certification	UL Listed 2108	UL Listed 2108	UL Listed 2108	UL Listed 2108	UL Listed 2108
Warranty	12 year	12 year	12 year	12 year	12 year



TECHNICAL INFORMATION

VALENT® X HIGH-DENSITY LED TAPE LIGHT

Specification Sheet

VALENT® X
HIGH-DENSITY LED TAPE LIGHT

Precision-engineered, high density tape light for demanding applications.
Up to 900+ lumens per foot with 95+ CRI / 90+ R9. 12 year warranty.

Date _____

Project Name _____

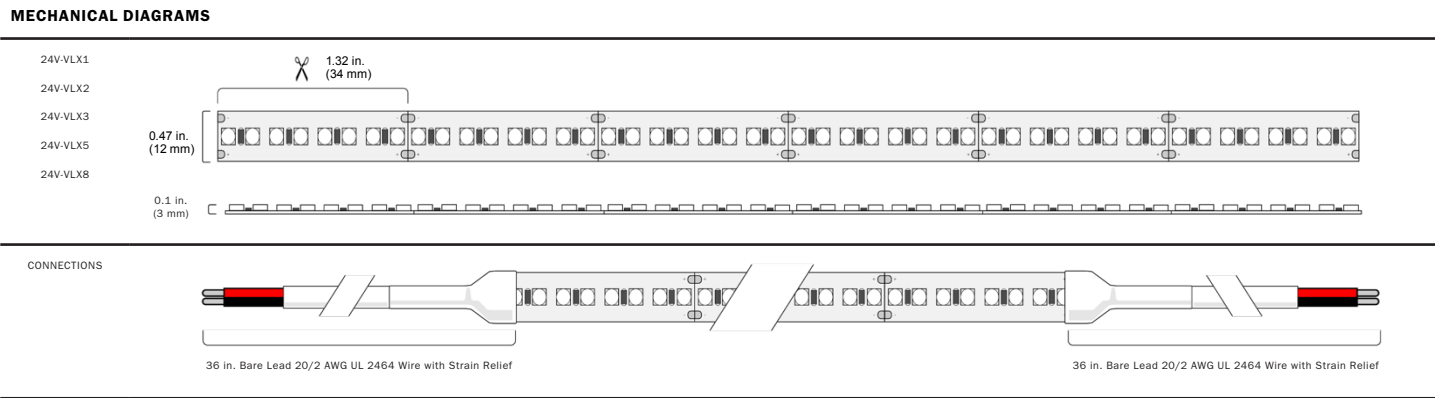
12
Year
Warranty

IP20

24
VDC

NEC
HAB-A-3-000-013
CLOSELY RATED

TITLE
24



ACCESSORIES		DELIVERY OPTIONS
DI-TB12-CONN-TTW 12mm Tape-to-Wire Connector	DI-TB12-CONN-TTT 12mm Tape-to-Wire Connector	• Field Assembly Stock items for in-field assembly. Fastest order fulfillment. • Factory + Field (Hybrid) Finished lengths of light with leads. CHANNELS either bulk or factory finished. Some field assembly required. • Factory Assembly Fastest installation: fixtures fully assembled in the factory.
DI-TB12-90-TTW 12mm 90° Tape-to-Wire Connector	DI-TB12-60SPL-TTW Splice Wire (Tape-to-Wire) (60 in.)	
DI-TB12-6JPR-TTT Jumper Cable (Tape-to-Tape) (6 in.)	DI-TB12-60JPR-TTT Jumper Cable (Tape-to-Tape) (60 in.)	

- Lumen value measured in accordance to IES LM-80-08. LED chips have a luminous flux range with a tolerance of +/- 5%.
- Each maximum run requires a dedicated power feed from the driver. Do not extend beyond the recommended maximum run length. Max run may exceed Class 2 limit. Actual wattage may differ from calculated wattage due to voltage drop across run.
- Do not install product in an environment outside the listed ambient temperature. Exceeding the maximum ambient temperature may damage LED chips, reduce the total lamp life, lumen output, and/or adversely impact color consistency.
- Actual efficacy value is dependent to specified LED driver (power supply). An estimated efficacy value can be calculated as follows: Lumen value divided by average power consumption per foot.
- Operating temperature is measured according to the minimum and maximum ambient temperature environment.

TECHNICAL INFORMATION

VALENT® X HIGH-DENSITY LED TAPE LIGHT

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VALENT® X
HIGH-DENSITY LED TAPE LIGHT

Precision-engineered, high density tape light for demanding applications.
Up to 900+ lumens per foot with 95+ CRI / 90+ R9. 12 year warranty.

Date _____

Project Name _____

12
Year
Warranty

IP20

24
VDC

NEC
HAB-A-3-000-013
CLOSELY RATED

TITLE
24

RECOMMENDED 24V DRIVERS									
SKU	INPUT VOLTAGE/ FREQUENCY	OUTPUT VOLTAGE	MAXIMUM LOAD	MINIMUM LOAD	CLASS 2	DIMMABLE	LENGTH	WIDTH	HEIGHT
OMNIDRIVE® X Dimmable Driver Versatile driver for most high-performance dimming on ELV, TRIAC, and 0-10V Systems.					OMNIDRIVE® X Dimmable Driver Specification Sheet https://www.diodeled.com/custom/download/productFile/filename/omnidrive-x-specification-sheet.pdf/			Contains: • Additional Models • Additional Features • Derating Curves • System Diagrams	
DI-ODX-24V30W-J	120-277V	24V	30W	No minimum load	Yes	Yes	6.5 in.	3.7 in.	1.36 in.
DI-ODX-24V60W-J	120-277V	24V	60W	No minimum load	Yes	Yes	7.4 in.	3.7 in.	1.36 in.
DI-ODX-24V96W-J	120-277V	24V	96W	No minimum load	Yes	Yes	8.66 in.	3.7 in.	1.36 in.
DI-ODX-24V120W-J	120-277V	24V	120W	No minimum load	No	Yes	8.66 in.	3.7 in.	1.36 in.
OMNIDRIVE® X Electronic Dimmable Driver Our classic electronic dimmable (ELV) driver. Superior dimming and wide compatibility with popular dimmers.					OMNIDRIVE® X Electronic Dimmable Driver Specification Sheet https://www.diodeled.com/custom/download/productFile/filename/omnidrive-indoor-electronic-dimma-ble-driver-specification-sheet.pdf/			Contains: • Additional Models • Additional Features • Derating Curves • System Diagrams	
DI-TD-24V-45W-LPS3R	90-135VAC at -50/60Hz	24V	45W	Load at least 60% labeled load	Yes	Yes	10.79 in.	7.34 in.	2.36 in.
DI-TD-24V-60W-LPS3R	90 - 135VAC 50/60Hz	24V	60W	Load at least 60% labeled load	Yes	Yes. Not compatible with PWM controls.	10.79 in.	7.34 in.	2.36 in.
DI-TD-24V-80W-LPS3R	90 - 135VAC 50/60Hz	24V	80W	Load at least 60% labeled load	Yes	Yes. Not compatible with PWM controls.	10.79 in.	7.34 in.	2.36 in.
VLM SERIES CONSTANT VOLTAGE DRIVER Compact driver for on/off, PWM dimming, and color-changing applications.					VLM Series Constant Voltage Driver Specification Sheet https://www.diodeled.com/custom/download/productFile/filename/VLM-Specification%20Sheet%20(Driver%20&%20J-Box).pdf/			Contains: • Additional Models • Additional Features • Derating Curves • System Diagrams	
VLM60W-24-LPS3R	120 / 277VAC 47 - 63Hz	24V	60W	No minimum load	Yes	PWM	10.79 in.	7.34 in.	2.36 in.
VLM60W-24-LPM	120 / 277VAC 47 - 63Hz	24V	60W	No minimum load	Yes	PWM	10.79 in.	2.94 in.	1.31 in.
POE (Power over Ethernet) Constant voltage platform, ready for Power over Ethernet (Inquire)									

RECOMMENDED CONTROLLERS	
SKU	DESCRIPTION
CASAMBI® Controllers The CASAMBI controllers will remotely control your lighting through the app - downloadable for iOS & Android.	
CBU-PWM4	CASAMBI PWM4 Single Color Dimming Controller
CBU-A2D	CASAMBI A2D 2 Channel 0-10V/DALI Controller
CBU-ASR	CASAMBI ASR 0-10V Controller
CBU-TED	CASAMBI TED AC High Voltage Controller
SWITCHEX® Driver and Dimmer Switch LED driver and dimmer switch combined in a single gang box.	
DI-24V-SE-60W	SWITCHEX 24V Switch/Driver Combo - 60W
DI-24V-SE-100W	SWITCHEX 24V Switch/Driver Combo - 100W



VALENT® X HIGH-DENSITY LED TAPE LIGHT

Certifications and Warranty

VALENT® X
HIGH-DENSITY LED TAPE LIGHT

Precision-engineered, high density tape light for demanding applications.
Up to 900+ lumens per foot with 95+ CRI / 90+ R9. 12 year warranty.

Date _____

Project Name _____



CERTIFICATIONS	WARRANTY
SAFETY • UL Listed 2108 Low Voltage Lighting System / Low Voltage Luminaire, UL 1598 / CSA 250.0-08, UL 8750, UL 879 / CAN/CSA-C22.2 no. 207-M89, Certified for United States and Canada, File # E-669769. • UL Listed Field Cuttable. • Approved for storage areas of clothes closets per NEC 410.16.A.3 and 410.16.C.5 • CE & EMC Compliant: Verification No. G2EM141200683705V	LIMITED WARRANTY 12 Year limited warranty This warranty does not include the additional accessories referenced in this specification sheet. For warranty related questions please contact product support.
ENVIRONMENT RoHS Compliant: Verification No. CANEC1610091501	CONSUMER'S ACKNOWLEDGMENT B+N Inc. stands behind its products when they are used properly and according to our specifications. By purchasing our products, the purchaser agrees and acknowledges that lighting design, configuration and installation is a complex process, wherein seemingly minor factors or changes in layout and in-field adjustments can have a significant impact on an entire system. Choosing the correct components is essential. B+N Inc. is able to work with the original purchaser to make an appropriate product selection to the extent of the limited information that the customer can provide, but it is virtually impossible for B+N Inc. to design a system that foresees every unknown factor. For this reason, this Warranty does not cover problems caused by improper design, configuration or installation issues. Any statement from a B+N Inc. employee or agent regarding a customer's bill of goods and/or purchase order is NOT an acknowledgment that the products purchased are designed and configured correctly. The purchaser agrees and acknowledges that it is the customer's responsibility to adhere strictly to all information contained in the Product Specification Sheets. There is often more than one way to design, configure and layout an LED lighting application properly to achieve the same lighting effect. B+N Inc. strongly recommends that licensed professionals be used in the design and installation of lighting systems that include B+N Inc. products. The specifications include important information that a designer and installer should carefully review and strictly follow. Qualified designers and certified and/or licensed installers, with access to the final installation environment, customer goals, and B+N Inc. product specifications can make the requisite decisions appropriate for a successful finished lighting application.
PERFORMANCE Can be used to comply with TITLE 24 Part 6 High Efficacy Lighting LED requirements - JA8-2016-2022-E LED chip data measured in accordance to IES LM-80-08. Photometric & Colorimetry data measured in accordance to IES LM-79-08, in Elemental LED's Innovation Lab.	
SAFETY / WARNINGS / DISCLOSURES 1. Install in accordance with national and local electrical code regulations. 2. This product is intended to be installed and serviced by a qualified, licensed electrician. 3. Only use copper wiring. Use wires rated for at least 176°F (80°C) and certified for use with external connection of electrical equipment. 4. Each maximum run requires a dedicated power feed from the driver. Do not extend beyond the recommended maximum run length. 5. Tape light, attached wire leads, and additional extension cables, connectors, etc., are not rated for in-wall installation unless otherwise noted. 6. Tape light and attached wire leads are field-cuttable. 7. Ensure applicable wire is installed between driver, fixture, and any controls in-between. When choosing wire, factor in voltage drop, amperage rating, and type (in-wall rated, wet location rated, etc.). Inadequate wire installation could overheat wires, and cause fire. 8. Do not install in environment where LED chips are exposed to direct sunlight as damage to the phosphor will occur. 9. Do not install in environment where excessive heat may exist (ex. close proximity to fireplace, etc.) See Ambient Temperature ratings. 10. Do not install indoor LED tape light products in outdoor / wet location environments. Only wet location tape light models are rated for outdoor / wet locations. 11. Do not modify product beyond instructions or warranty will be void. 12. Tape light must be handled with care. Excessive handling, bending, and pressure may damage the product, voiding the warranty. 13. Actual color may vary from what is pictured on this sheet and other print materials due to the limitations of photographic processes. 14. We reserve the right to modify and improve the design of our fixtures without prior notice. We cannot guarantee to match existing installed fixtures for subsequent orders or replacements in regards to product appearance, CCT, or lumen output.	

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TECHNICAL INFORMATION

VALENT® X | WET LOCATION HIGH-DENSITY LED TAPE LIGHT

Specification Sheet

VALENT® X | WET LOCATION
HIGH-DENSITY LED TAPE LIGHT

Versatile driver for most high-performance dimming on ELV, TRIAC, and 0-10V systems. Dims to dark depending on installation

Date

Project Name

12
Year
Warranty

IP65

24
VDC

NEC
RATED
CLOSET RATED

TITLE
24

FEATURES															
• 500 Lumen output • 95+ CRI • 1.32 inch cuttable increments • Precision color rendering with 90+ R9 value • Ultra high lumen output • 12 Year limited warranty															
															
ORDERING CODES															
Order spools, and components for field assembly															
OPTIONAL ORDERING CODES															
Add Length, Assembly Preferences, and Finish															
	VOLTAGE	MODEL	CCT	LENGTH	CHANNELS		FINISH	LENS	MOUNTING	DRIVER	DELIVERY				
DI															
	24V (24V Volt)	VLX5	27 (2700K)	W016 (16.4 feet)	A1 (A1)	RC20 (20mm Round)	4S (45°)	AL (Aluminum)	*blank* (Classic Frosted Lens)	3M (3M Adhesive)	ELV (Electronic)	010 (0-10V)	Field Assembly		
			30 (3000K)	W100 (100 feet)	S2 (S2)	SQ20 (20mm Square)	REC (Recessed)	BL (Black)	BL (Black Lens)	MC (Mounting Clip)	O/O (On/Off)	PoE (Power Over Ethernet)	Factory + Field (Hybrid)		
			35 (3500K)		S45 (S45)	SL (Slim)	M11 (1-inch Mud-In)	WH (White)	CLT (Arch. Clear Lens)	UC (U-Clip)	LUT (Lutron)		Factory Assembly		
			40 (4000K)		16 (16mm square)	SQ (Square)	M12 (2-inch Mud-In)		FRT (Arch. Frosted Lens)	UV (Vertical Clip)					
												OPT (Opal Lens)	HNG (Hanging Hardware)		
												PD (Perm. Diffusion Lens)	RC (Rotating Clip)		
			* See Other page for Channel / Lens / Mounting Compatibility												

VALENT® X WET LOCATION SPECIFICATION TABLE	
MODEL	24V-VLX5
VOLTAGE	24VDC
WATTAGE	4.6W/ft.
2400k	466 Ln/ft.
2700k	437 Ln/ft.
Lumens 3000k	469 Ln/ft.
3500k	492 Ln/ft.
4000k	480 Ln/ft.
Cut Points	1.32 in.
Max Run (ft.)	30 ft.
CRI	95+
Dimensions	0.55 x 0.22 in. (W x H)
TM-21 (LM-80)	>50,000 hours
Environment	Outdoor / Wet Location (IP65)
Lead Wire A	36 in. Bare Lead 20/2 AWG UL 2464 Wire with Strain Relief
Lead Wire B	36 in. Bare Lead 20/2 AWG UL 2464 Wire with Strain Relief
LED Chips	72/ft.
Chip Type	2835
Certification	UL Listed 2108
Warranty	12 year



TECHNICAL INFORMATION

VALENT® X | WET LOCATION HIGH-DENSITY LED TAPE LIGHT

Specification Sheet

VALENT® X WET LOCATION
HIGH-DENSITY LED TAPE LIGHT

Versatile driver for most high-performance dimming on ELV, TRIAC, and 0-10V systems. Dims to dark depending on installation

Date

Project Name

12
Year
Warranty

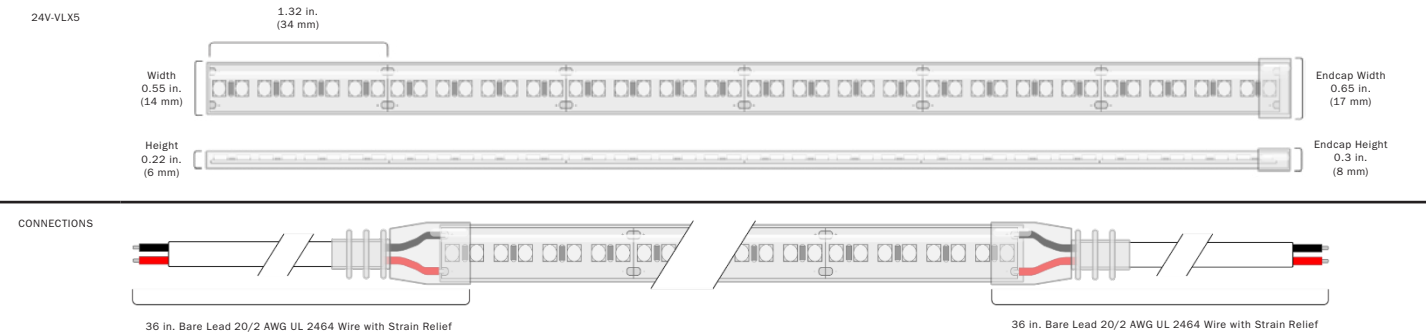
IP65

24
VDC

NEC
RATED
CLOSET RATED

TITLE
24

MECHANICAL DIAGRAMS

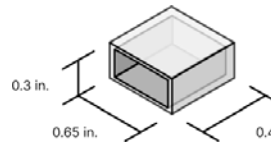


ACCESSORIES

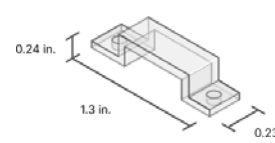
Soldered Lead Only



DI-WL-12MM-EC-S
Wet Location Strip End Caps, 12mm Tape, Silicone,
5-pack (5 open, 5 closed)



DI-WLMC-12MM
12mm Tape, Wet Location Over Clips, 10 pack, with
20 screws



DI-WPSL
Wet Location Sealant



VALENT® X WET LOCATION HIGH-DENSITY LED TAPE LIGHT

Mechanical Diagrams, Accessories, & Delivery Options

- Lumen value measured in accordance to IES LM-80-08. LED chips have a luminous flux range with a tolerance of +/- 5%.
- Each maximum run requires a dedicated power feed from the driver. Do not extend beyond the recommended maximum run length. Max run may exceed Class 2 limit. Actual wattage may differ from calculated wattage due to voltage drop across run.
- Do not install product in an environment outside the listed ambient temperature. Exceeding the maximum ambient temperature may damage LED chips, reduce the total lamp life, lumen output, and/or adversely impact color consistency.
- Actual efficacy value is dependent to specified LED driver (power supply). An estimated efficacy value can be calculated as follows: Lumen value divided by average power consumption per foot.
- Operating temperature is measured according to the minimum and maximum ambient temperature environment.

TECHNICAL INFORMATION

VALENT® X | WET LOCATION HIGH-DENSITY LED TAPE LIGHT

Specification Sheet

VALENT® X | WET LOCATION
HIGH-DENSITY LED TAPE LIGHT

Versatile driver for most high-performance dimming on ELV, TRIAC, and 0-10V systems. Dims to dark depending on installation

Date _____

Project Name _____

12

Year

Warranty



IP65

24

VDC



NEC
HABAS & HOSBIS
CLOSET RATED

TITLE

24

RECOMMENDED 24V DRIVERS									
SKU	INPUT VOLTAGE/ FREQUENCY	OUTPUT VOLTAGE	MAXIMUM LOAD	MINIMUM LOAD	CLASS 2	DIMMABLE	LENGTH	WIDTH	HEIGHT
OMNIDRIVE® X Dimmable Driver Versatile driver for most high-performance dimming on ELV, TRIAC, and 0-10V Systems.					OMNIDRIVE® X Dimmable Driver Specification Sheet https://www.diodeled.com/custom/download/productFile/filename/omnidrive-x-specification-sheet.pdf/			Contains: • Additional Models • Additional Features • Derating Curves • System Diagrams	
DI-ODX-24V30W-J	120-277V	24V	30W	No minimum load	Yes	Yes	6.5 in.	3.7 in.	1.57 in.
DI-ODX-24V60W-J	120-277V	24V	60W	No minimum load	Yes	Yes	7.4 in.	3.7 in.	1.57 in.
DI-ODX-24V96W-J	120-277V	24V	96W	No minimum load	Yes	Yes	8.66 in.	3.7 in.	1.57 in.
DI-ODX-24V120W-J	120-277V	24V	120W	No minimum load	No	Yes	8.66 in.	3.7 in.	1.57 in.
VLM Series Constant Voltage Driver Compact driver for on/off, PWM dimming, and color-changing applications					VLM Series Constant Voltage Driver Specification Sheet https://www.diodeled.com/custom/download/productFile/filename/VLM-Specification%20Sheet%20(Driver%20&%20J-Box).pdf/			Contains: • Additional Models • Additional Features • Derating Curves • System Diagrams	
VLM60W-24-LPS3R	120 / 277VAC 47 - 63Hz	24V	60W	No minimum load	Yes	PWM	10.79 in.	7.34 in.	2.36 in.
VLM60W-24-LPM	120 / 277VAC 47 - 63Hz	24V	60W	No minimum load	Yes	PWM	8.19 in.	2.94 in.	1.31 in.
VLM100W-24-LPS3R	120 / 277VAC 47 - 63Hz	24V	100W	No minimum load	Yes	PWM	10.79 in.	7.34 in.	2.36 in.
MEANWELL CONSTANT VOLTAGE DRIVER Driver for on/off, or PWM dimming applications.					MEANWELL Constant Voltage Driver Specification Sheet https://www.diodeled.com/custom/download/productFile/filename/commercial-grade-CV-Driver-Specification%20Sheet%20(24V%20Models).pdf/			Contains: • Additional Models • Additional Features • Derating Curves • System Diagrams	
DI-CV-MW24V60W-277-LPS3R	120 - 277VAC 50/60Hz	24V	60W	No minimum load	Yes	Yes, with compatible PWM dimmer/controls	10.79 in.	7.34 in.	2.36 in.
DI-CV-MW24V60W-277-LPS	120 - 277VAC 50/60Hz	24V	60W	No minimum load	Yes	Yes, with compatible PWM dimmer/controls	11.25 in.	3.75 in.	1.9 in.
POE (Power over Ethernet) Constant voltage platform, ready for Power over Ethernet (inquire)									

RECOMMENDED CONTROLLERS	
SKU	DESCRIPTION
CASAMBI® Controllers The CASAMBI controllers will remotely control your lighting through the app - downloadable for iOS & Android.	
CBU-PWM4	CASAMBI PWM4 Single Color Dimming Controller
CBU-A2D	CASAMBI A2D 2 Channel 0-10V/DALI Controller
CBU-ASR	CASAMBI ASR 0-10V Controller
CBU-TED	CASAMBI TED AC High Voltage Controller
SWITCHEX® Driver and Dimmer Switch LED driver and dimmer switch combined in a single gang box.	
DI-12V-SE-40W	SWITCHEX 12V Switch/Driver Combo - 40W
DI-12V-SE-60W	SWITCHEX 12V Switch/Driver Combo - 60W



TECHNICAL INFORMATION

VALENT® X | WET LOCATION HIGH-DENSITY LED TAPE LIGHT

Specification Sheet

VALENT® X | WET LOCATION
HIGH-DENSITY LED TAPE LIGHT

Versatile driver for most high-performance dimming on ELV, TRIAC, and 0-10V systems. Dims to dark depending on installation

Date _____

Project Name _____

12

Year

Warranty



IP65

24

VDC



NEC
HABAS & HOSBIS
CLOSET RATE

TITLE

24

CERTIFICATIONS	WARRANTY
SAFETY - UL Listed 2108 Low Voltage Lighting System / Low Voltage Luminaire. UL 1598 / CSA 250.0-08, UL 8750, UL 879 / CAN/CSA-C22.2 no. 207-M89, Certified for United States and Canada. File # E469769. - UL Listed Field Cuttable. - Approved for storage areas of clothes closets per NEC 410.16.A.1.3 and 410.16.C.1.3.5 - CE & EMC Compliant: Verification No. GZEM141200683705V	LIMITED WARRANTY 12 Year limited warranty This warranty does not include the additional accessories referenced in this specification sheet. Complete warranty details for fixtures and additional accessories are available at www.diodeled.com/limited-warranty/ within the Policies section. For warranty related questions please contact product support.
ENVIRONMENT - Ambient Temperature: -4 - 122°F (-20 - 50°C) - Operating Temperature: -4 - 176°F (-20 - 80°C) - RoHS Compliant: Verification No. CANEC1610091501	CONSUMER'S ACKNOWLEDGMENT Elemental LED, Inc. stands behind its products when they are used properly and according to our specifications. By purchasing our products, the purchaser agrees and acknowledges that lighting design, configuration and installation is a complex process, wherein seemingly minor factors or changes in layout and infield adjustments can have a significant impact on an entire system. Choosing the correct components is essential. Elemental LED is able to work with the original purchaser to make an appropriate product selection to the extent of the limited information that the customer can provide, but it is virtually impossible for Elemental LED to design a system that foresees every unknown factor. For this reason, this Warranty does not cover problems caused by improper design, configuration or installation issues. Any statement from a Elemental LED employee or agent regarding a customer's bill of goods and/or purchase order is NOT an acknowledgment that the products purchased are designed and configured correctly. The purchase agrees and acknowledges that it is the customer's responsibility to adhere strictly to all information contained in the Product Specification Sheets. There is often more than one way to design, configure and layout an LED lighting application properly to achieve the same lighting effect. Elemental LED strongly recommends that licensed professionals be used in the design and installation of lighting systems that include Elemental LED products. The specifications include important information that a designer and installer should carefully review and strictly follow. Qualified designers and certified and/or licensed installers, with access to the final installation environment, customer goals, and Elemental LED product specifications can make the requisite decisions appropriate for a successful finished lighting application.
PERFORMANCE - Can be used to comply with TITLE 24 Part 6 High Efficacy Lighting LED requirements - JAB-2016-2022-E - LED chip data measured in accordance to IES LM-80-08. - Photometric & Colorimetry data measured in accordance to IES LM-79-08, in Elemental LED's Innovation Lab.	
SAFETY / WARNINGS / DISCLOSURES - Install in accordance with national and local electrical code regulations. - This product is intended to be installed and serviced by a qualified, licensed electrician. - Only use copper wiring. Use wires rated for at least 176°F (80°C) and certified for use with external connection of electrical equipment. - Each maximum run requires a dedicated power feed from the driver. Do not extend beyond the recommended maximum run length. - Tape light, attached wire leads, and additional extension cables, connectors, etc., are not rated for in-wall installation unless otherwise noted. Tape light and attached wire leads are field-cuttable. - Ensure applicable wire is installed between driver, fixture, and any controls in-between. When choosing wire, factor in voltage drop, amperage rating, and type (in-wall rated, wet location rated, etc.). Inadequate wire installation could overheat wires, and cause fire. - Do not install in environment where LED chips are exposed to direct sunlight as damage to the phosphor will occur. - Do not install in environment where excessive heat may exist (ex. close proximity to fireplace, etc.) See Ambient Temperature ratings - Do not install indoor LED tape light products in outdoor / wet location environments. Only wet location tape light models are rated for outdoor / wet locations. - Do not modify product beyond instructions or warranty will be void. - Tape light must be handled with care. Excessive handling, bending, and pressure may damage the product, voiding the warranty. - Actual color may vary from what is pictured on this sheet and other print materials due to the limitations of photographic processes. - We reserve the right to modify and improve the design of our fixtures without prior notice. We cannot guarantee 1match existing installed fixtures for subsequent orders or replacements in regards to product appearance, CCT, or lumen output.	

TECHNICAL INFORMATION

VALENT® X | DIMMABLE DRIVER

Specification Sheet

OMNIDRIVE® X
DIMMABLE DRIVER

Precision-engineered, high density tape light for wet locations (IP65). Up to 500+ lumens per foot with 95+ CRI / 90+ R9.



24
VDC

24
VDC

12
VDC

TITLE
24

FEATURES & BENEFITS

- ELV, TRIAC, and 0-10V dimming in a single driver
- 100-277VAC universal input
- No minimum load
- Minimum dimming level of <1%, depending on the dimmer
- UL Listed and Title 24 compliant

QUICK SPECS

ENVIRONMENT	Indoor/Outdoor
INPUT VOLTAGE	100-277VAC
OUTPUT VOLTAGE	12VDC & 24VDC Models
CONNECTION TYPE	Hardwired
WARRANTY	5 Year Limited Warranty
DIMMING	Forward Phase, Reverse Phase Dimming, and 0-10V Dimming
CERTIFICATION	UL Listed & JA8/JA10 Compliant

24V OMNIDRIVE® X						
OUTPUT	SKU	WATTAGE	CLASS 2	ENVIRONMENT	DIMENSIONS W/O J-BOX	DIMENSIONS W/ J-BOX (-J)
24 VDC	DI-ODX-24V30W(-J)*	30W	Yes	Indoor/Outdoor	2.1x0.8x6.1 in.	3.7x1.36x6.5 in.
	DI-ODX-24V60W(-J)*	60W	Yes	Indoor/Outdoor	2.4x1x7 in.	3.7x1.36x7.4 in.
	DI-ODX-24V96W(-J)*	96W	Yes	Indoor/Outdoor	2.7x1.7x9 in.	3.7x1.36x8.66 in.
	DI-ODX-24V120W-J	120W	No	Indoor/Outdoor	-	3.7x1.36x8.66 in.
	DI-ODX-24V200W-J	200W	No	Indoor/Outdoor	-	4.92x1.95x10.24 in.

12V OMNIDRIVE® X						
OUTPUT	SKU	WATTAGE	CLASS 2	ENVIRONMENT	DIMENSIONS W/O J-BOX	DIMENSIONS W/ J-BOX (-J)
12 VDC	DI-ODX-12V30W(-J)*	30W	Yes	Indoor/Outdoor	2.1x0.8x6.1 in.	3.7x1.36x6.5 in.
	DI-ODX-12V60W(-J)*	60W	Yes	Indoor/Outdoor	2.4x1x7 in.	3.7x1.36x7.4 in.
	DI-ODX-12V100W-J	100W	No	Indoor/Outdoor	-	3.7x1.36x8.66 in.
	DI-ODX-12V120W-J	120W	No	Indoor/Outdoor	-	3.7x1.36x8.66 in.
	DI-ODX-12V200W-J	200W	No	Indoor/Outdoor	-	4.92x1.95x10.24 in.

These drivers have an optional junction box (J). For driver only, do not include “-J”.

TECHNICAL INFORMATION

VALENT® X | COMMERCIAL GRADE PLUG-IN ADAPTER

Specification Sheet

24
VDC

12
VDC

TITLE
24

24VDC Plug-in Adapters convert 120VAC voltage to 24VDC output. An adapter is the right choice for portable installations where hard-wiring is not desired.



24
VDC

FEATURES & BENEFITS

- Black Finish
- Short circuit, over current, over voltage, over temperature protections
- Fanless design/cooling by free-air convection
- UL listed 1310 Class 2
- For use with commercial applications

QUICK SPECS

ENVIRONMENT	Indoor/Dry Locations
INPUT VOLTAGE	100-240VAC
OUTPUT VOLTAGE	24VDC
CONNECTION TYPE	Wire
WARRANTY	3 Year Limited Warranty
DIMMING	PWM
CERTIFICATION	UL Listed

Visit the product page on the website for specification sheets, install guides, IES files, and photometric reports.

DI	—	MODEL	—	VOLTAGE/WATTAGE	—	CLASS	—	COLOR	—	GRADE
DI	—	PA	—	24V96W	—	CL2	—	B (Black)	—	CG (Commercial Grade)

EXAMPLE: 24V 96W Commercial Grade Plug-In Adapter = **DI-PA-24V96W-CL2-B-CG**

Fortina MSDS > Interior

Date: Feb. 13, 2015
Reference number: SBR-0284

To:B+N Industries,Inc.

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION	
Product name	FORTINA (Interior Type)
Name of manufacturer	Toppan Cosmo, Inc.
Address	3-19-26 Shibaura, Minato-ku, Tokyo, Japan Toppan Shibaura Building
Telephone No.	03-5418-3500
Emergency contact	03-5418-3680 (Product Engineering Group, Product Manufacturing Department, Development Division)
Fax No.	03-5418-3676
2. HAZARDS IDENTIFICATION	
GHS classification	Not applicable.
Hazard statement	(1) Non-hazardous material and risk is low. (2) Prolonged inhalation of dust generated by cutting may affect the respiratory organs. (3) If dust generated by cutting gets into the eyes, the eyeballs may be damaged. (4) Some pigments and stabilizers contain heavy metals, Cr (trivalent), Sb and Ni.
Effect to environment	None known.
3. COMPOSITION / INFORMATION ON INGRDEDIENTS	
Classification of single product or mixture	Mixture (Printed film, adhesive and aluminum)
Chemical name (Product name)	Aluminum material coated with polyolefin resin sheet
Ingredients and contents	Polyolefin resin, ink pigment, polyurethane resin, acrylic resin and aluminum
Chemical formula or structural formula	Not applicable since it is a mixture
Reference Number in Gazetted List in Japan	Not applicable because it is a mixture
UN classification and UN number	Not applicable because it is a mixture
4. FIRST AID MEASURES	
IF IN EYES	Wash in running water without rubbing because dust and fragments generated when cutting may damage the eyeballs. Consult with a medical specialist.
IF ON SKIN	Prolonged contact of dust generated by cutting with skin may cause rough skin. If skin inflammation occurs, consult with a medical specialist.
IF INHALED	If any discomfort is experienced, immediately remove to fresh air.
IF SWALLOWED	After vomiting, immediately get medical attention.

Fortina MSDS > Interior

Date: Feb. 13, 2015
Reference number: SBR-0284

	Minister of Land, Infrastructure, Transport and Tourism, take measures such as evacuating upwind and wearing protective equipment in the event of fire because toxic substances such as black smoke and carbon monoxide may be generated in case the product is exposed to high temperature and the decorative surface layer burns.
Extinguishing media	Water spray, dry chemical, foam

6. ACCIDENTAL RELEASE MEASURES	Not applicable.
--------------------------------	-----------------

7. HANDRING AND STORAGE	
Handling	Wear protective gloves (cotton gloves, etc.) when handling. Wear protective glasses and dust protective mask when cutting or fabricating. Sufficiently ventilate the workplace. Provide dust collectors.
STORAGE	Take care not to cut your hands on edges of the product. Store in packaged state in indoor general warehouse avoiding direct sunlight. Be careful to keep dry. Avoid falling, dropping and friction.

8. EXPOSURE CONTROL / PERSONAL PROTECTION	
[Exposure control]	
None	
[Personal protection]	Equipment countermeasure
Respiratory protective equipment	None Wear appropriate protective equipment (dust protective mask, etc.) when performing work that generates dust.
Protective glasses	Wear appropriate protective equipment (goggles, full-surface shield, etc.) when performing work that generates dust.
Protective gloves	Wear appropriate protective equipment (synthetic rubber gloves, arm covers, etc.).
Protective clothes	Wear appropriate protective clothes when performing work that generates dust.

9. PHYSICAL AND CHEMICAL PROPERETIES	
Appearance, etc.	Bar-type solid form
Boiling point	Not applicable.
Vapor pressure	Not applicable.
Volatility	Not applicable.
Melting point	Not applicable.
Specific gravity	2.7 g/m ²
Initial boiling point	Not applicable.
Solubility in water	Not applicable.
Others	Not applicable.

Fortina MSDS > Interior

Date: Feb. 13, 2015
Reference number: SBR-0284

10. SAFETY AND REACTIVITY

Flash point	Decorative surface layer: Approx. 300℃ .
Ignition point	Decorative surface layer: Approx. 400℃.
Explosion limit	Upper limit: No data. Lower limit: No data.
Combustibility	Decorative surface layer: Combustible
Ignitability (pyrophoricity, reactivity with water)	None known.
Oxidizability	Contact with chemical substances, such as acid, may generate harmful gas.
Autoreactivity, explosiveness	None.
Dust explosiveness	Lower explosive limit: 45g/m ³
Stability, reactivity	Decorative surface layer: Relatively weak against alkali
Others	None known.

11. TOXICOLOGICAL INFORMATION (Including case with people and epidemiological information)

Skin corrosivity	None known.
Irritation (skin, eyes)	Prolonged contact of dust generated by cutting with skin may cause rough skin.
Sensitizing potential	None known.
Acute toxicity	None known.
Subacute toxicity	None known.
Chronic toxicity	None known.
Carcinogenicity	None known.
Mutagenicity	None known.
Reproductive toxicity	None known.
Teratogenicity	None known.
Others (Including generation of toxic gas by reaction with water, etc.)	None known.
Others	None known.

12. ECOLOGICAL INFORMATION

Degradability	None known.
Accumulative property	None known.
Fish toxicity	None known.

13. DISPOSAL CONSIDERATIONS

This product and its cut pieces can be classified as “scrap metal” specified by law.
Ask an appropriate recovery company to dispose them of.

14. TRANSPORT INFORMATION

Load in a manner to prevent falling, dropping, abrasion, etc. during transportation and provide reliable measures to prevent load shifting.

Keep dry.

15. REGULATORY INFORMATION

None

Fortina MSDS > Interior

Date: Feb. 13, 2015
Reference number: SBR-0284

Tourism, MFN-0717 F☆☆☆☆

Materials containing asbestos are not used.

The contents of this sheet are based on reference materials, information and data that are available at present and may be revised according to revision of laws and regulations as well as due to new findings. In addition, the precautions described in this document are intended for use under normal conditions. In case of special handling is required, provide appropriate safety measures for the application and usage.
The contents of this sheet are for provision of information and are not guaranteed.

Fortina MSDS > Exterior

Date: Jan. 21, 2015
Reference number: SBR-0281

To:
Property name:

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	FORTINA: Exterior Type
Name of manufacturer	Toppan Cosmo, Inc.
Address	3-19-26 Shibaura, Minato-ku, Tokyo, Japan Toppan Shibaura Building
Telephone No.	03-5418-3500
Emergency contact	03-5418-3680 (Product Engineering Group, Product Manufacturing Department, Development Division)
Fax No.	03-5418-3676

2. HAZARDS IDENTIFICATION

GHS classification	Not applicable.
Hazard statement	(1) Non-hazardous material and risk is low. (2) Prolonged inhalation of dust generated by cutting may affect the respiratory organs. (3) If dust generated by cutting gets into the eyes, the eyeballs may be damaged.
Effect to environment	None known.

3. COMPOSITION / INFORMATION ON INGRDEDIENTS

Classification of single product or mixture	Mixture (Aluminum, printed film and adhesive)
Chemical name (Product name)	Composite material of laminated aluminum and resin sheets
Ingredients and contents	Aluminum, polyolefin resin, ink pigment, polyvinylidene fluoride, methacrylic acid alkyl ester/acrylic acid alkyl ester copolymer, etc.
Chemical formula or structural formula	Not applicable because it is a mixture
Reference Number in Gazetted List in Japan	Not applicable because it is a mixture
UN classification and UN number	Not applicable because it is a mixture

4. FIRST AID MEASURES

IF IN EYES	Wash in running water without rubbing because dust and fragments generated when cutting may damage the eyeballs. Consult with a medical specialist.
IF ON SKIN	Prolonged contact of dust generated by cutting with skin may cause rough skin. If skin inflammation occurs, consult with a medical specialist.
IF INHALED	If any discomfort is experienced, immediately remove to fresh air.
IF SWALLOWED	After vomiting, immediately get medical attention.

Fortina MSDS > Exterior

Date: Jan. 21, 2015
Reference number: SBR-0281

	Minister of Land, Infrastructure, Transport and Tourism, take measures such as wearing protective equipment according to the situation because toxic and corrosive fluorine-containing substances can be generated in case the product is exposed to high temperature and the decorative surface layer burns.
Extinguishing media	Water spray, dry chemical, foam, carbon dioxide

6. ACCIDENTAL RELEASE MEASURES

Not applicable.

7. HANDRING AND STORAGE

Handling	Wear protective gloves (cotton gloves, etc.) when handling. Wear protective glasses and dust protective mask when cutting or fabricating. Sufficiently ventilate the workplace. Provide dust collectors.
STORAGE	Take care not to cut your hands on edges of the product. Store in packaged state in indoor general warehouse avoiding direct sunlight. Be careful to keep dry. Avoid falling, dropping and friction.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

[Exposure control]	None
[Personal protection]	Equipment countermeasure
Respiratory protective equipment	None Wear appropriate protective equipment (dust protective mask, etc.) when performing work that generates dust.
Protective glasses	Wear appropriate protective equipment (goggles, full-surface shield, etc.) when performing work that generates dust.
Protective gloves	Wear appropriate protective equipment (synthetic rubber gloves, arm covers, etc.).
Protective clothes	Wear appropriate protective clothes when performing work that generates dust.

9. PHYSICAL AND CHEMICAL PROPERETIES

Appearance, etc.	Bar-type solid form
Boiling point	Not applicable.
Vapor pressure	Not applicable.
Volatility	Not applicable.
Melting point	Not applicable.
Specific gravity	2.7 g/m ²
Initial boiling point	Not applicable.
Solubility in water	Not applicable.
Others	Not applicable.

Fortina MSDS > Exterior

Date: Jan. 21, 2015
Reference number: SBR-0281

10. SAFETY AND REACTIVITY

Flash point	Decorative surface layer: No data
Ignition point	Decorative surface layer: No data
Explosion limit	Upper limit: No data. Lower limit: No data.
Combustibility	Decorative surface layer: Combustible
Ignitability (pyrophoricity, reactivity with water)	None known.
Oxidizability	None under normal handling conditions
Flammability	Toxic gas (hydrogen fluoride, carbon oxide, etc.) may be generated.
Autoreactivity, explosiveness	None known.
Dust explosiveness	Lower explosive limit: 45g/m³
Stability, reactivity	Decorative surface layer: May react with strong oxidizers.
Others	None known.

11. TOXICOLOGICAL INFORMATION (Including case with people and epidemiological information)

Skin corrosivity	None known.
Irritation (skin, eyes)	Prolonged contact of dust generated by cutting with skin may cause rough skin.
Sensitizing potential	None known.
Acute toxicity	None known.
Subacute toxicity	None known.
Chronic toxicity	None known.
Carcinogenicity	None known.
Mutagenicity	None known.
Reproductive toxicity	None known.
Teratogenicity	None known.
Others (Including generation of toxic gas by reaction with water, etc.)	None known.
Others	None known.

12. ECOLOGICAL INFORMATION

Degradability	None known.
Accumulative property	None known.
Fish toxicity	None known.

13. DISPOSAL CONSIDERATIONS

This product and its cut pieces can be classified as “scrap metal” specified by law.
Ask an appropriate recovery company to dispose them of.

14. TRANSPORT INFORMATION

Load in a manner to prevent falling, dropping, abrasion, etc. during transportation and provide reliable measures to prevent load shifting.

Keep dry.

15. REGULATORY INFORMATION

None

Fortina MSDS > Exterior

Date: Jan. 21, 2015
Reference number: SBR-0281

Tourism, MFN-0717 F☆☆☆☆.
Materials containing asbestos are not used.

The contents of this sheet are based on reference materials, information and data that are available at present and may be revised according to revision of laws and regulations as well as due to new findings. In addition, the precautions described in this document are intended for use under normal conditions. In case of special handling is required, provide appropriate safety measures for the application and usage.
The contents of this sheet are for provision of information and are not guaranteed.

Toppan Cosmo, Inc.

Fortina Warranty > p. 1

1. Limited Warranty:

For Toppan Products used according to the “Conditions of Use” specified in Section 2 of this Exhibit B, Toppan shall warrant the below during the limited warranty period set forth in this Section 1 (the “Warranty”) except as specified in Section 3 of this Exhibit B as exclusions or limitations.

- i. No significant blister and peel for the Warranty Period; and
*It is intended for the defects that have peeled off in their natural condition after installation.
- ii. No color fading in excess of the second grade of gray scale defined in ISO 105-A03
*Grey scale evaluation should be done by Toppan.

Warranty Period: Ten (10) years from the date of delivery of the Product from Toppan or the manufacturer on behalf thereof. In case of breach of this warranty (the “Breach” or “Breaching”), B&N has a right to obtain certain remedy pursuant to Section 4 and Section 5 in this Exhibit B from Toppan.

Except to the extent prohibited by applicable law, the warranty is made in lieu of all other warranties, rights or conditions, express or implied, including, but not limited to, any implied warranty of merchantability, satisfactory quality, fitness for a particular purpose and those arising from a course of dealing, custom or usage of trade. B+N is responsible for determining if a product is suitable for its particular purpose and application methods. The warranty set forth herein constitutes the sole remedy of B+N and of the sole responsibility of the Toppan for Toppan products.

2. Conditions of Use:

- i. Toppan Products dedicated for exterior application are suitable for using exterior decoration except for horizontal area or in extreme weather conditions.
- ii. Toppan Products dedicated for interior application are designed for interior decoration and shall not be used in a place exposed to direct sunlight, strong artificial light such as mercury lamp or floodlight etc.
- iii. Toppan Products should be treated with the requirements of proper instructions thereof.
- iv. Toppan Products operation should be done complying with any local, state, municipal, provincial, or federal laws pertaining to the use, storage, processing, application, distribution, and disposal of Toppan Products.

Fortina Warranty > p. 2

3. Exclusions and Limitations:

Disclaimer: When the Toppan Product falls under the following cases, it shall be handled for a fee even during the above Warranty Period. Toppan is not responsible for any breach of the Warranty not reported during the Warranty Period. The Warranty also does not apply to any Toppan Products ordered by B&N before the date of this Agreement.

- i. Defects that occur intentionally or accidentally, or during processing or installation.
- ii. Defects attributable to fabrication, processing, assembling, operation, management, or maintenance conducted by a third party employed without regular arrangement.
- iii. Defects such as deterioration of Toppan Products caused by members or auxiliary materials not involved in use of Toppan Products.
- iv. Defects caused by the use of Toppan Products installed in an environment other than the specified and reasonably recognized service environment and operated beyond the prescribed level of performance.
- v. Defects of Toppan Products caused by external factors like attributable to deformation of the building structure.
- vi. Aging change of Toppan Products or any of its components such as wear and tear, aging deterioration, such as denaturation or discoloration, or rusting, molding or other defects associated with these.
- vii. Defects attributable to rust.
- viii. Damage due to location of a special environment such as a hot spring, incineration plant, or swimming pool facility or industrial area where special gas, heat, acid, alkali, or salt is used or generated. Area where salt damage occurs or area where water splash constantly occurs because of proximity to a lake or river area where flue dust or chemicals such as metallic powder, stone powder, or agricultural chemicals are attached or accumulated, and damage by environmental pollution.
- ix. Damage by natural disasters such as typhoon, flood, earthquake, lightning, or icicle.
- x. Defects attributable to phenomena technically unforeseeable in commercialization of Toppan Products.
- xi. Defects attributable to animals such as dogs, cats, birds, or mice.
- xii. Defects attributable to relocation, repair or remodeling of Toppan Products conducted by the Purchase.
- xiii. Defects caused by repaired area like touch-up paint has been applied.
- xiv. Damage caused by cleaning with inappropriate tools such as scrubbers or brushes or with chemicals.
- xv. Damage aggravated as a result of initial damage or defects left unattended for a long time.
- xvi. Defects caused by the failure of appropriate maintenance after delivery.
- xvii. Defects caused by use of Toppan Products for purposes other than the originally intended use or defects caused by a method of use different from the intended use.
- xviii. Defects caused by no use of authentic accessories or members or by use of members other than our own.
- xix. Defects including damage attributable to illegal conduct such as crime.
- xx. Defects due to improper storage after product delivery (for example high-temperature and humidity at storage in a place, long-term storage that exceeds the Warranty Period, and defects due to water, stacking, exposure to direct sunlight, extremely low temperatures and etc.).
- xxi. Problems caused by condensation due to natural phenomena or living environment, expansion and cracking or breakage due to freezing, expansion and contraction due to temperature difference, twisting, etc.
- xxii. The loss by delivery delays or nonfulfillment of this product due to natural disasters, wars, riots, transportation accidents, epidemics, and other sudden matters.
- xxiii. Defects due to operational errors, improper adjustments, or improper maintenance after product delivery.
- xxiv. Defects caused by electrical equipment such as heat generated from lighting equipment, air conditioners etc.
- xxv. Defects caused by the installation that doesn't follow the Fortina standard installation methods or proper settlement.
- xxvi. Defects caused by thermal elongation of aluminum substrate due to temperature changes.

Fortina Warranty > p. 3

4. Claims Procedure:

If B&N discovers an alleged Breach of the Warranty in a Toppan Products, and notify Toppan of such in writing with (i) sufficient details of such alleged Breach; (ii) the related purchase order number; (iii) the address of the installed product and date of installation; and (iv) other detailed information regarding the allegedly Breaching Toppan Products within thirty (30) days of the discovery and during the Warranty Period, Toppan shall investigate whether there is any Breach in such Products. B&N shall return the subject allegedly Breaching Toppan Products for investigation together with the notification above, and shall allow Toppan to inspect them at the installed site.

5. Remedies

5.1 If Toppan confirms that there is Breach on the Toppan Products upon the investigation set forth in Section 4 of this Exhibit B, Toppan shall, at its discretion:

- i. repair the Breaching product;
- ii. replace the Breaching product; or
- iii. refund the price paid to Toppan for the delivery of the subject Breaching product pursuant to the refund policy set forth herein.

In case of replacement, Toppan shall deliver, at Toppan’s sole cost and expense, the replacement to B&N at the location to be agreed between the Parties within Territory. In case of refund, the refund price shall decrease in accordance with the following schedule:

Elapsed time from the beginning of the warranty period	Percentage of the price to be refunded
Within 2 years	100%
More than 2 years within 4 years	80%
More than 4 years within 6 years	50%
More than 6 years within 8 years	30%
More than 8 years within 10 years	10%

5.2 The Toppan Products replaced pursuant to Section 5.1 of this Exhibit B shall be subject to the same warranties, the same conditions and the same remedies as the original Toppan Products, provided that the Warranty Period therefore shall be the balance of the applicable Warranty Period relating to the replaced Toppan Products.

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Fortina Fire Rating Documentation

FORTINA ASTM E84 **CLASS A PASSED** CIRT R16045.01.024h

SOUTHWEST RESEARCH INSTITUTE®

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CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
FIRE TECHNOLOGY DEPARTMENT
WWW.FIRE.SWRI.ORG
FAX (210) 522-3377



ASTM E 84 - 10
INVESTIGATION OF THE SURFACE BURNING
CHARACTERISTICS OF A NOMINAL 0.13-MM
THICK PRINTED DECORATIVE FOIL, LAMINATED
ONTO AN ALUMINUM C-CHANNEL RAIL
TRADE NAME: TOPPAN FORTINA (TIA008)

FINAL REPORT
Consisting of 5 Pages
SwRI® Project No.: 01.16045.01.024h

Test Date: October 19, 2010
Report Date: November 10, 2010

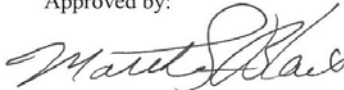
Prepared for:

TOPPAN INTERAMERICA, INC.
1131 HWY 155 SOUTH
MCDONOUGH, GA 30253

Prepared by:


Anthony L. Saucedo
Group Leader
Material Flammability Section

Approved by:


Matthew S. Blais, Ph.D.
Director
Fire Technology Department

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Fortina Fire Rating Documentation

FORTINA ASTM E84 **CLASS A PASSED** CIRT R16045.01.024h

INTRODUCTION

This report presents the test results for a specimen submitted by Toppan Interamerica, Inc., located in McDonough, GA, and tested at Southwest Research Institute's (SwRI's) Fire Technology Department, located in San Antonio, Texas. The test is conducted in accordance with the procedure outlined in ASTM E 84 - 10, *Standard Test Method for Surface Burning Characteristics of Building Materials* (NFPA 255, ANSI/UL 723 and UBC 8-1).

This test method is applicable to exposed surfaces, such as ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period. The test is conducted with the material in the ceiling position.

The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame Spread and Smoke Developed index are reported. However, there is not necessarily a relationship between these two measurements.

This standard should be used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions and should not be used to describe or appraise the fire-hazard or fire-risk of materials, products, or assemblies under actual fire conditions. However, results of the test may be used as elements of a fire-hazard assessment or a fire-risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard or fire risk of a particular end use.

Test specimens are conditioned as appropriate in an atmosphere maintained between 68 and 78 °F and 45 to 55% relative humidity. Immediately prior to the test, the specimen is mounted in the furnace with the side to be tested facing the test flame. Cement board is placed on the unexposed side of the specimen to protect the furnace lid assembly. Sometimes, because of the nature of the material undergoing testing, additional support (e.g. wire, wire and rods, rods, and/or bars) is used to ensure that the specimen will remain in position during the test. The use of supporting materials on the underside of the test specimen may lower the Flame Spread Index from that which might be obtained if the specimen could be tested without such support, and the test results do not necessarily relate to indices obtained by testing materials without such support.

The flame front position and light obscuration are recorded throughout the 10-minute test and used to calculate the Flame Spread and Smoke Developed indices. The temperature at 23 ft is also recorded. The Flame Spread and Smoke Developed indices reported herein are relative to the results obtained for mineral fiber-reinforced cement board and select grade red oak (moisture content between 6 and 8%). The mineral fiber-reinforced cement board is the calibration material used to obtain 0 values for Flame Spread and Smoke; red oak decks are used to obtain 100 values for Flame Spread and Smoke.

The results apply specifically to the specimens tested, in the manner tested, and not to the entire production of these or similar materials, nor to the performance when used in combination with other materials.

Two model building codes (2009 International Building Code[®], Chapter 8 *Interior Finishes*, Section 803 *Wall and Ceiling Finishes*; NFPA 5000, Chapter 10 *Interior Finish*, Section 10.3 *Interior Wall or Ceiling Finish Testing and Classification*) classify materials based on the Flame Spread and Smoke Developed indices. For reference purposes, the classification criteria are listed below:

Classification	Flame Spread Index	Smoke Developed Index
A	0 – 25	0 – 450
B	26 – 75	0 – 450
C	76 – 200	0 – 450

Toppan Interamerica, Inc.

2

SwRI Project No: 01.16045.01.024h

Fortina Fire Rating Documentation

FORTINA ASTM E84 **CLASS A PASSED** CIRT R16045.01.024h

ASTM E 84 - 10 REPORT

CLIENT: TOPPAN INTERAMERICA, INC.
SWRI PROJECT NO.: 01.16045.01.024h
TEST DATE: OCTOBER 19, 2010
DAILY TEST NO.: 2

DESCRIPTION OF SPECIMEN

DATE RECEIVED: October 13, 2010 (received ready-to-test)

MATERIAL ID:* Fortina

TRADE NAME:* Toppan Fortina (TIA008)

DESCRIPTION:* Printed decorative foil laminated onto aluminum C-channel rails

COMPOSITION:* Poly-olefin foil laminated onto aluminum

THICKNESS: 1.58-in. O.D. square C-channel (nominal)
0.047-in. wall (nominal)
*0.13-in. foil (nominal)

UNIT WEIGHT: 0.7 lbs per rail (nominal)

COLOR: Natural

SPECIMEN SIZE: One hundred eighty-two, 1.58-in. square C-channels × 20.5-in. long rails placed side by side, and end to end, down the length of the chamber (flat wood grain decorative side to burner)

CONDITIONING TIME: 5 days at 70 °F and 50% relative humidity

WITNESSED BY: Messrs. Nickie Fukuyama and Trey Nakamura representing, Toppan Interamerica, Inc.

* From Client's material description and/or instructions

Fortina Fire Rating Documentation

FORTINA ASTM E84 **CLASS A PASSED** CIRT R16045.01.024h

ASTM E 84 - 10 REPORT

CLIENT: TOPPAN INTERAMERICA, INC.
SWRI PROJECT NO.: 01.16045.01.024h
TEST DATE: OCTOBER 19, 2010
DAILY TEST NO.: 2

TEST RESULTS

FLAME SPREAD INDEX (FSI): 10
SMOKE DEVELOPED INDEX (SDI): 10

TEST DATA

UNROUNDED FSI: 12.5
UNROUNDED SDI: 10.2
FS*TIME AREA (Ft*Min): 24.2
SMOKE AREA (%*Min): 12.8
FUEL AREA (°F*Min): 5059.3

OBSERVATIONS DURING TEST

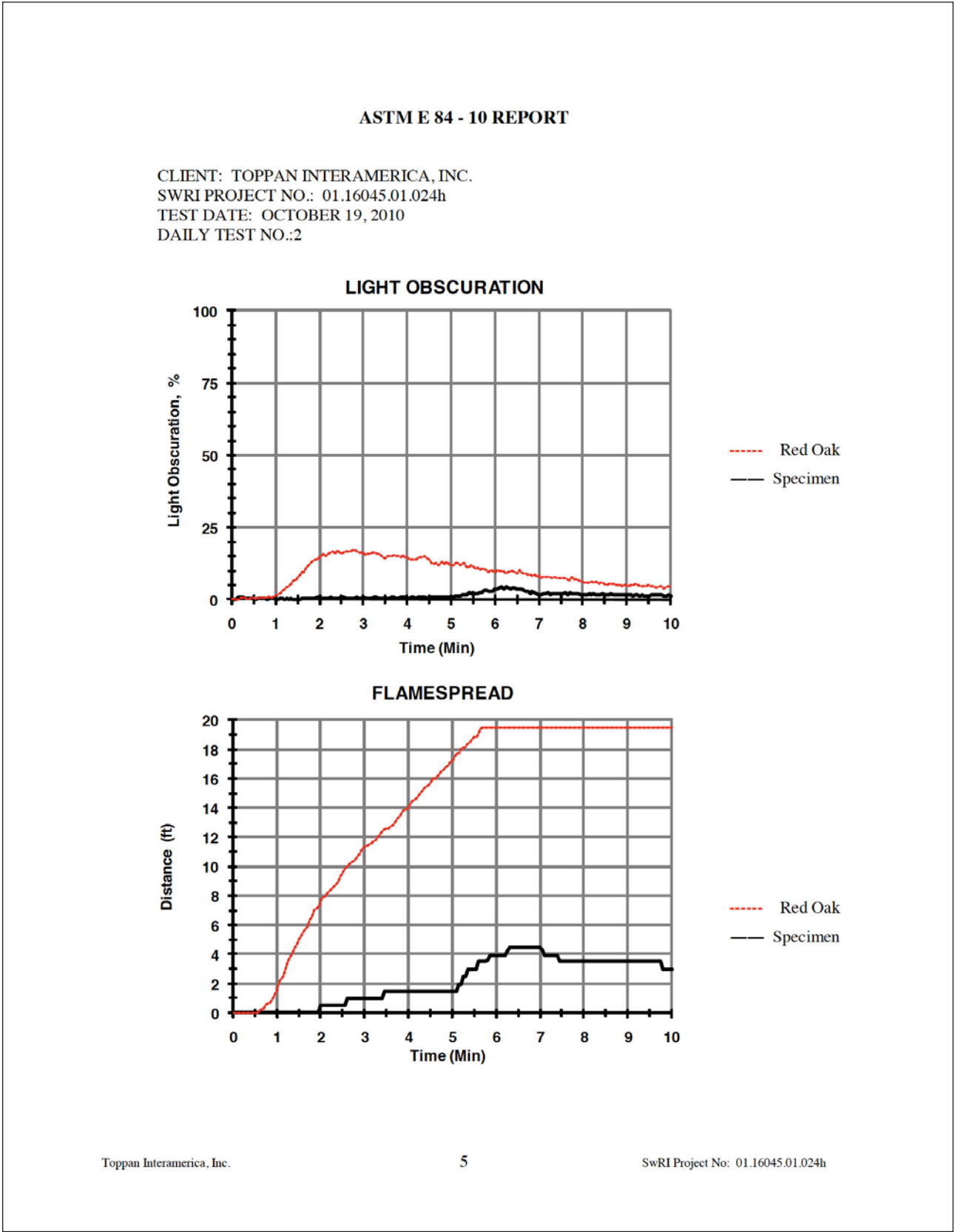
IGNITION TIME (Min:Sec): 02:39
MAXIMUM FLAME FRONT ADVANCE (Ft.): 4.5
TIME TO MAXIMUM ADVANCE (Min:Sec): 6:18
MAXIMUM TEMP. AT EXPOSED TC (°F): 577
TIME TO MAXIMUM TEMP. (Min:Sec): 9:15
TOTAL FUEL BURNED (Cu. Ft.): 53.0
DRIPPING (Min:Sec): None
FLAMING ON FLOOR (Min:Sec): None
AFTERFLAME TOP (Min:Sec): 01:12
AFTERFLAME FLOOR (Min:Sec): None
SAGGING (Min:Sec): None
DELAMINATION (Min:Sec): None
SHRINKAGE (Min:Sec): None
FALLOUT (Min:Sec): None

CALIBRATION DATA

RED OAK SMOKE AREA (%*Min): 76.9
RED OAK FUEL AREA (°F*Min): 8376
GRC BOARD FUEL AREA (°F*Min): 5407

Fortina Fire Rating Documentation

FORTINA ASTM E84 **CLASS A PASSED** CIRT R16045.01.024h



Fortina Performance Data > Exterior Film

Decorative Sheet Performance Data (Exterior Specification)

Evaluation Items		Test items	Test method	
1	Dimensional stability	Heat resistance test	Put a cross-cut measuring 100 mm x 100 mm at the center of a specimen, leave it at a temperature of 65°C for two days, and check the clearance at the cross-cut part.	
2	Weather resistance	Accelerated weathering test	Apply a light beam to the specimen with a sunshine carbon arc weather meter for 8,000 hours and check the appearance.	
3	Heat resistance	Long-term heat resistance test	Leave the specimen in each oven for 1,000 hours and check the appearance.	60°C 80°C
4	Heat cycle resistance	Heat-cold repeating test	Conduct 100 cycles, with each cycle consisting of 80°C for two hours switched to -20°C for two hours, and observe the appearance.	
5	Dry/wet cycle resistance	Dry/wet cycle test	Conduct 20 cycles, with each cycle consisting of 40°C and 30% RH for 8 hours switched to 40°C and 90%RH for 16 hours, and observe the appearance.	
6	Humidity resistance	Long-term humidity resistance test	Leave the specimen in a high humidity tank at a constant temperature of 40°C and 90%RH and observe the appearance.	
7	Scratch resistance	Pencil scratch resistance (based on JIS H8602)	Apply the core of the pencil to the specimen while applying a load of 1 kg to the angle of about 45° and scratch the surface toward the front at a constant speed.	
8	Abrasion resistance	Abrasion resistance test	Rotate the specimen 7,000 times with a taper abrasion tester (abrasion wheel: CS-17; and load: 1 kg) and observe the appearance.	
		Falling sand abrasion resistance test (based on JIS H8602)	Let a grinding material fall through a guiding tube of 20 mm in inner diameter to the specimen at an angle of 45° at a falling rate of 320 g/min. and measure the time when the base material begins to be exposed and the abrasion depth.	
9	Low temperature impact resistance	Dupont impact test	Let a 1 kg weight fall from a height of 30 cm to the specimen at 5°C and observe the appearance.	
10	Pollution resistance	Pollution resistance test (1)	Immerse dry cotton in a solvent, rub the surface of the specimen with the cotton for 20 strokes and observe the appearance.	Petroleum benzine Methyl ethyl ketone Ethyl acetate Ethanol Blue ink
		Pollution resistance test (2)	Apply each pollutant, wipe it off with water or ethanol after a lapse of 24 hours and observe the appearance.	Black shoe cream Black marker Red crayon
		Oil and solvent resistance test	Apply each oil and solvent, wipe it off with water after a lapse of 24 hours and observe the appearance.	Heating oil CRC556 Ethanol Petroleum benzine
11	Acid resistance	Acid resistance test	Immerse the specimen in a 1% sulfuric acid aqueous solution for one hour and observe the appearance.	
12	Alkali resistance	Alkali resistance test (based on JIS H8602)	Put a drop of 5 g/l sodium hydrate aqueous solution to the surface, leave it for 24 hours, wash the solution off with water, and observe the appearance.	
13	Corrosion resistance	CASS corrosion resistance test (based on JIS H8602)	Put the specimen in a test tank, spray a sodium chloride solution of a 50 g/l concentration to the specimen for 48 hours, and observe the appearance.	
14	Adhesiveness	Cross-cut peel test (based on JIS H8602)	Scratch the surface at an interval of 2 mm in both the longitudinal and transverse directions to the depth that reaches the base material, make 100 grids with those scratches, apply cellophane tape over the grids, and peel it off.	
15	Adhesive strength	Normal state adhesiveness test	Pull the sheet in a 180 degree direction at a rate of 200 mm/min. relative to the base material under a normal room temperature and measure the adhesive strength.	
		Heat creep resistance test	Apply a load at a rate of 500 g/25 mm to the sheet at a 90 degree direction relative to the base material at 60°C and measure the peeling distance 30 min. later.	
		Cold creep resistance test	Apply a load at a rate of 500 g/25 mm to the sheet at a 90 degree direction relative to the base material at -20°C and measure the peeling distance 30 min. later.	

* These data are based on our own test results. We do not guarantee those results.

Fortina Performance Data > Interior Film

Decorative Sheet Adhesion Performance Data (Interior Specification)

Evaluation Items		Test items	Test method
1	Weather resistance	Accelerated weathering test	Apply light beam for a certain duration of time with a sunshine carbon arc weather meter.
2	Heat resistance	Heat resistance test (company standard)	Leave the specimen in an oven at a temperature of 60 ± 5°C for 48 hours.
3	Water resistance	Water resistance test (company standard)	Immerse the specimen in room temperature water for 24 hours and then dry it.
4	Humidity resistance	Humidity resistance test (company standard)	Leave the specimen in a tank at a constant temperature and humidity of 40 ± 2°C and 90 ± % RH for 48 hours.
5	Heat cycle resistance	Heat-cold repeating test (based on JAS heat-cold repeating C test)	Put a specimen measuring 150 x 150 mm in an oven at a temperature of 60 ± 3°C, leave it there for two hours, and leave it in a low-temperature tank at - 20 ± 3°C for two hours. Repeat this for two cycles.
6	Chemical resistance	Chemical resistance (company standard)	Apply (a) 2% sodium hydrate, (b) 5% acetate solution, and (c) petroleum benzine to the specimen, leave it for six hours and wipe them off.
		Chlorine resistance test (company standard)	Apply chlorine of 1.0 mg/L, which is the sanitation criterion for a swimming pool, and chlorine of 10.0 mg/L, 10 times higher concentration of the above, to the specimen, leave it for 24 hours, 48 hours, and 72 hours, and wipe it off. However, change chlorine water every six hours considering the decomposition rate of chlorine. • Sanitation criterion of a swimming pool: The residual free chlorine concentration of water in a swimming pool shall be 0.4 mg/L or more. The desired concentration is 1.0 mg/L (according to the notification of the Director-General, Environmental Health Bureau, Ministry of Health and Welfare).
7	Pollution resistance	Pollution resistance test (1)	Apply each detergent (weak alkali, neutral, and weak acid), insecticide, and heating oil to each specimen, leave them for six hours, and wipe them off.
		Pollution resistance test (2)	Draw a 10 mm wide line with a permanent marker and a crayon, leave it for two hours, and wipe it off with a solvent or a detergent.
8	Abrasion resistance	Abrasion resistance test (pattern loss) (based on JAS abrasion C test)	Conduct a test on a 120 x 120 mm specimen with a taber abrasion tester and calculate the rotational value when the loss of pattern reaches 50%.
9	Scratch resistance	Scratch resistance test (company standard)	Pencil hardness test based on JIS K 5400 (load of 500 g)

* These data are based on our own test results. We do not guarantee those results.

Fortina Care and Maintenance

Cleaning

- Wipe with dry cloth.
- If necessary soap and water is fine to clean.
- No harsh chemicals are recommended.
- Do not use organic solvent such as alcohol for cleaning.
- Do not brush with steel brush, steel wool, or sandpaper.
- Do not handle Battens on surfaces with grit or gravel.
- More maintenance required in industrial areas or near ocean.

TECHNICAL INFORMATION

FAQ

GENERAL QUESTIONS:

1. What is Fortina?
Fortina is a decorative wood alternative unlike anything on the market; aluminum Battens and slats are wrapped in a non-PVC film that mimics woodgrain colors and textures. It is lightweight, easily customizable, durable, quick to install, effortless to maintain, and, most importantly, beautiful.

2. What are the attributes of Fortina?
Fortina has been widely used in interiors and exteriors of commercial and residential buildings since its inception in Japan in 2009. Fortina's lightweight dimensional stability, uniform coloration, and incombustible material allow for a clean and quick installation.

3. How many sizes are there?
Our Battens come in 36 sizes, offered in square, rectangular, triangular, and round shapes. The smallest profile is 20mm x 40mm (3/4" x 1 1/2") and the largest is 50mm x 150mm (2" x 6").

Our slats come in 5 sizes with a 10mm reveal (ranging from 60mm to 200mm wide), and 3 sizes with no reveal (ranging from 100mm to 150mm wide).

All profile dimensions are in metric.

4. What is the longest Batten/slat length available?
16'-0" is the longest length for ocean shipping. 9'-6" is the longest length for air freight – additional charges will apply for any length exceeding 9'-6".

FINISHES:
5. How many finishes are there?
A total of 109 films are available in interior and exterior grade. Anodized and painted options are also available. Finish codes start with TE for interior finishes and TA for exterior finishes.

6. Are all the finishes the same price?
Exterior finishes are slightly more expensive than interior finishes. Please request a quote for more specific pricing.

7. Can the Exterior spec be used indoors? Is it more durable? Can an indoor spec be used outdoors if it is UV coated?
Exterior finishes can be used for indoors, and durability is the same.

Interior grade finishes cannot be used outdoors even with the UV coat, because the printed ink specification is different

TEST RESULTS
8. What is the fire rating?
Fortina has passed these certifications for non flammability.
• ASTM E84 CLASS A Fire Rating (FSI10/ SDI10)
• NM2239 and 2244
• European Standard CLASS B (French M1)

9. How does the product hold up in hot/humid climates and near "water"?
Film used for Fortina have passed two year exposure test (EMMAQUA) in New River, Arizona.

WARRANTY / CARE AND MAINTENANCE

10. What is the warranty?
We offer a 10-year limited warranty. Please visit our Warranty page for more information.

11. Will the Battens withstand power washing?
We do not recommend power washing the Battens/slats.

TECHNICAL INFORMATION

FAQ

12. Do the Battens scratch easily? What can we do about scratches?
Scratch test result 2B. Touch up paint is the most convenient way to hide scratches, but it's not perfect. A 10% overage is highly recommended for the purpose of having extra components to cover any damages beyond touch up. A touch up pen matching the HD1 paper can be provided upon request.

13. Is there any type of care/maintenance required?
Wipe with a wet soft cloth or wet sponge, then wipe with a dry cloth. Do not brush with steel brush, steel wool or sandpaper. Do not handle the Battens on surfaces with grit or gravel as it will cause scratches. Do not use organic solvent such as alcohol for cleaning. Check bolts, nuts or screws in a timely manner. More maintenance may be required in industrial areas or near the ocean.

14. Can the Battens get wet?
While it's not ideal for interior grade finishes, our exterior grade finishes can get wet as they are designed to be outside.

INSTALLATION
15. What is the best way to cut the Battens on site?
Aluminum cutting saw is required along with long table. A new blade is recommended.

16. Is there an explanation on how the joint between the Battens (and spandrels) works for a very long ceiling?
We recommend leaving an expansion gap of 1-2 mm (1/8" max) between Battens/slats.

17. Do the Stringers and brackets come in a variety of sizes and finishes?
Stringers come in different sizes depending on the application. anodized aluminum is the standard finish, but they can also be powder coated.

18. How much does the "average" THS-4080 Batten weigh per foot?
As an example, THS-4080 weighs 0.688 lbs per linear foot. Batten weights vary based on profile size.

19. What is the lead-time?
Fortina is made to order. Our typical lead time is 12-15 weeks.

20. Is there any hardware to hang/merchandise products from the Battens?
No, Battens are only decorative.

21. Can the Battens be curved?
No, the Battens cannot be curved.

PURCHASING FORTINA
22. Do you have local reps?
All Fortina inquiries are handled from our Head Office in California. Please call (800) 350-4127.

23. What is the square footage price of Fortina?
Pricing is not based on square footage. It varies based on profile size and quantity ordered. Please call (800) 350-4127 or request a quote on our website.

24. How can I get samples?
Click "Order Samples" on the Fortina website or call (800) 350-4127.

25. Do you offer an expedited option?
The production time is set, but shipping can be expedited via air freight.

Terms And Conditions

QUOTE BY PHONE

1-800-350-4127 (Outside Northern California)
1-650-593-4127 (Northern California)

QUOTE/ORDERING BY E-MAIL

MAIL@BNIND.COM (Ready 24 hours a day)

CUSTOMER SERVICE

Customer service is available 8:00 am to 5:00 pm (PST)
Mon. – Thurs. and 8:00 am to 12:00 pm on Fri. to answer
your inquiries regarding products, quotes or orders.

WARRANTY

We fully support the quality of our product. If there are any
manufacturing defects within a year of delivery, please
contact our Customer Service Department by phone or
e-mail for assistance.

PRODUCT WARRANTY LIMITATIONS

The Customer is purchasing the fixtures in an "as-is"
condition, unless otherwise reported to the Company
pursuant to [the inspection provision in the contract],
as of the date of delivery and specifically and expressly
without any warranties, representations or guarantees,
either expressed or implied, except as set forth below,
as to its condition, fitness for any particular purpose,
merchantability, or any other warranty of any kind, nature or
type whatsoever from or on behalf of the seller.
The Company hereby warrants to the Customer and its
successors and assigns that the product supplied to the
Customer is constructed only for the use and purposes
contemplated by the Customer set forth in the contract;
and the Company, immediately prior to the delivery of the
product had good and lawful right to sell the product, and
that there is hereby conveyed to the Customer on the date
of delivery, good title to the product, free and clear of all
liens, claims, encumbrances and rights of others.

WEBSITE / PRINTED MATERIALS

The copy has been reviewed to present information as
accurately as possible. If an error is found in description
or pricing, or the item has been discontinued, yet not
updated, B+N reserves the right to correct it at the time it
was discovered.

**PRODUCT OFFERINGS AND MATERIAL FINISHES ARE
SUBJECT TO CHANGE AT ANY TIME.**

ORDER SHIPMENTS ESTIMATES

Orders in stock will ship via ground in 2 – 5 days, unless
another service level is requested by the customer.

BACK ORDERS

Unless otherwise noted, back orders will ship when they are
back in stock at our facility. Your Sales Administrator will
keep you advised on the status of all back orders.

BLANKET ORDERS

Blanket orders are subject to a unique set of Terms &
Conditions defined at the time of order placement.

MINIMUM ORDER REQUIREMENTS

\$500 threshold must be reached to place an order.

STORAGE

Storage fees will be assessed after 30 days for all materials
that were scheduled to ship but were delayed for customer
related reasons at no fault to B&N Industries. Fees will
be assessed weekly at \$500 or 5% of the total order,
whichever is greater. If an order is paid in full, then the
storage fees must be cleared prior to shipment. If an order
is partially paid for, then the remaining balance on the
order plus storage fees must be paid prior to shipment.

CANCELLATION AND RETURN ITEMS

1. Stock items must be returned within 30 days, in
re-sellable condition. Return of stock items may incur
a 25% re-stocking fee. Freight charges on returns are
the customer's responsibility. A return authorization is
required for all returns. Items returned without the proper
authorization will not be accepted. B+N assumes no liability
for customer returns which arrive damaged due to shipment
transportation.
2. Non-stock items purchased may not be returned.
3. Prepaid material that remains beyond the 30-day
original delivery schedule prior to cancellation will also be
subject to storage fees.

FREIGHT AND MULTIPLE SHIPMENTS

1. The following will result in additional charges unless
otherwise stated on your quotation:
– Shipments to multiple destinations or split shipments to
the same location.
– Customer requesting custom packaging (includes
breakout into multiple packages) and shipped to one
location.
2. Collect or 3rd Party Billing shipments are the
responsibility of the freight payer.
3. Freight quotations are subject to re-quote at any time
prior to the order being placed or at time of shipment if
shipment is delayed.
4. Customer is responsible to arrange and pay for
International freight, as quotes are for transportation only.
Freight quotes provided by B&N do not include the broker,
customs duties, fees or taxes. That is the responsibility
of the customer to obtain and pay directly to the source.
Broker information must be provided prior to shipping.
5. Weights and measurements may change due to changes
in suppliers and/or packaging.
6. B&N is unable to guarantee delivery times or dates.
Delivery times and dates are the responsibility of the
shipping agent.
7. Regarding split shipments: On occasion, an order may
ship from multiple locations based on availability.

PRODUCT DISCREPANCIES AND DAMAGES VIA

SHIPMENT

1. Customer must inspect items upon delivery for damage
or discrepancy. Please refer to B&N's Delivery Shipper
Checklist Info document for terms.

The Delivery Checklist can be found here:

<https://www.BNIND.COM/resources/technical-data>

2. B+N accepts no liability for damage incurred during
shipping. Any damage found at time of delivery must be
noted by customer on delivery receipt and signed/initialed
by driver. Customer is to retain all packaging with damaged
items for an on-site inspection by carrier.
3. For damage on 3rd party or collect shipments, the
customer is responsible for filing the claim with the carrier
for financial reimbursement.
4. If any product arrives in damaged condition, a
freight claim must be filed with the delivering carrier.
Retain packing material and note on the Bill of Lading
"DAMAGED". Our Customer Service Department will assist
you with any questions regarding filing a freight claim.
5. All claims regarding shortages and freight damages must
be presented WITHIN 7 DAYS of receiving the shipment.

PAYMENT METHODS AND TERMS

ACH, Wire, and Company Checks

· Banking information can be provided upon request for
electronic payment options

Credit Cards (subject to 2.5% processing fee)

· We accept VISA, MASTERCARD, AMERICAN EXPRESS.

1. Payment is due in full prior to shipping of product
for all PREPAID ACCOUNTS. We do not ship COD. For
payments made by check or bank transfer, the order will be
processed upon receipt and approval of check or receipt
of funds.
2. Consideration for establishing terms requires a combined
order amount of \$1,000,000+.
3. Approved repeat customers may qualify for NET terms
at B&N's discretion if sufficient volume is reached. A
credit application must be completed with the necessary
references. Please allow 2-3 weeks for processing. All
custom orders outside of a standard project scope will
continue to require a 50% deposit.

SALES TAX

Due to the Wayfair vs South Dakota ruling all orders
are subject to sales tax in the state that the material is
delivered to unless a valid resale certificate is provided.
Due to uncertain Economic Nexus requirements sales
tax can be added to any order after a quote has been
provided.

1. Taxable orders paid for by the customer and will-called
at our California facility are taxed at the current rate for San
Mateo County.

PROTOTYPES, DRAWINGS, TOOLING, AND FIXTURES

1. Drawings provided by B+N are the exclusive property of
B+N Industries, Inc.
2. Prototypes made from drawings that are not detailed
and approved by B+N Industries, Inc., or have been
supplied via verbal instruction from the customer, are
subject to the interpretation of B+N Industries, Inc.
3. Tooling dies and fixtures made and used exclusively for
a job or customer, remain the property of B+N Industries,
Inc., unless otherwise established.

PHOTOGRAPHY OF COMPLETED PROJECTS

B+N Industries, Inc. reserves the right to photograph a
completed project that has utilized our product offerings
and retains the rights to use the photographs in advertising,
on our website, public relations and all marketing materials.

FORTINA SPECIFIC ORDERS WARRANTY

WARRANTY

We support the quality of the Fortina product for 10
years. For more information, please visit our Warranty
section.

CANCELLATION AND RETURN ITEMS

Fortina is considered a custom made to order line,
therefore, may not be returned.

If an order is canceled which is in production the
customer is liable for paying for all products ordered.



B+N Industries

Main Offices:

15 Guittard Road

Burlingame, California 94010

1.800.350.4127

www.BNIND.COM

New York Showroom and Offices:

(By Appointment Only)

420 West 14th Street

New York, New York 10014

212.255.4110

Houston Showroom and Offices:

(By Appointment Only)

1800 Bering Drive, Suite 500

Houston, Texas 77057

713.430.9100

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