RAIL 2 ACOUSTIC

Metalumen

Bringing acoustics to light

When designing lighting for a space, why not consider a luminaire that can also solve an often overlooked issue in that space - noise.

Our Rail 2 Acoustic creates a 2-in-1 solution by combining our luminaire with sound absorbing baffles by our partner ezoBord. It's an architectural luminaire that doesn't compromise on aesthetic appeal, working harmoniously with acoustic materials to reduce the noise levels in any space for optimal productivity.

The Rail 2 Acoustic is ideal for:

- office spaces
- lobbies
- libraries
- classrooms
- boardrooms
- banks
- recording studios
- restaurants

Acoustics

Architectural environments are designed with creative concepts that can create critical issues of excessive noise, speech privacy, lack of speech clarity, and absence of personal workspaces. Discomfort from noise is a critical component to loss in productivity and lower employee satisfaction.

Designing a space with proper acoustics has shown the following improvements in work performance:

Distractions were **decreased** by

51% ↓

Ability of workers to **focus** went **up** by

48% ↑

Error rates **improved** by

10% ↑

Physical symptoms of **stress** went **down** by

27% ↓

Based on "How Acoustics Affect Human Productivity", David M. Sykes, Ph.D.

Acoustics Basics

What makes sound anyway?

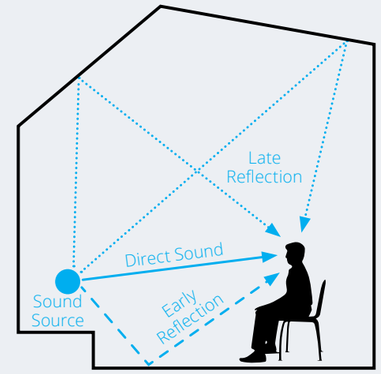
Sound is a type of energy created by vibrations. These particles bump into adjacent air molecules causing them to bump into more air particles, similar to a chain reaction. This movement, called sound waves, keeps going until they run out of energy. If your ears' frequency range is within range of these vibrations, you hear the sound.

What is reverberation and reverb time?

Reverberation is a persistence of sound after a sound is produced. Direct sound and its reflected sound arrives at your ears at different times creating confusion to the ear and a general lack of intelligibility.

Reverb time (RT60) is the time it takes a sound to drop by sixty decibels to a 'background noise level'.

Short reverb time = clarity

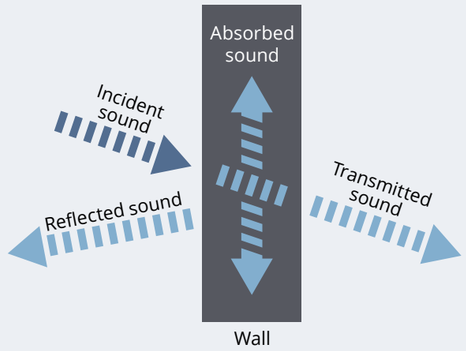


When a sound wave encounters an object, three things happen:

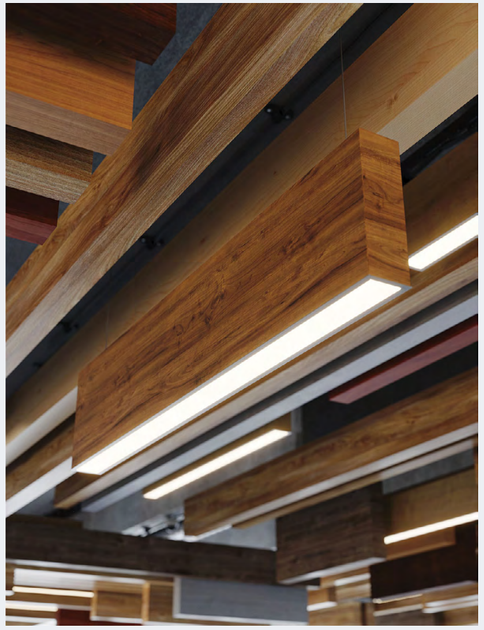
Reflection . Absorption . Transmission

Sound does not go on forever

Once sound is caught up in some type of absorptive material or structure, it loses its energy because of friction.



Acoustics Basics



Absorption

Sound is soaked up when striking an absorbent surface or wall.

Different materials = different absorption rates

Mid to High Frequency Absorption

Thin, lower density, soft / porous materials absorb mid to high frequency waves.

Low Frequency Absorption

Thicker, higher density materials, like fiberglass batting and mineral wool, absorb lower frequency waves.

Absorption Summary

Thickness and density of the absorptive material will create variances in acoustical properties.

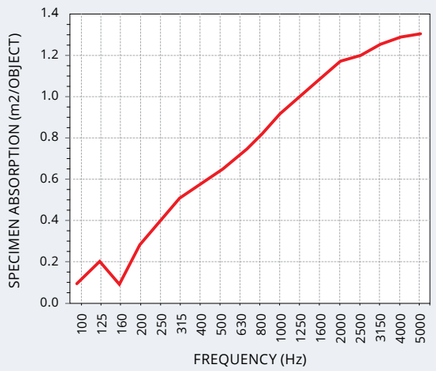
Effectiveness of each treatment depends on the square footage and location in which it is placed.

Noise Reduction Coefficient (NRC Value)

Noise Reduction Coefficient (NRC) Is the sound absorption rate of a product.

An NRC value of 0 absorbs no sound at all and an NRC of 1.0 means that the product absorbs 100% of the sound with zero reflection.

Rail 2 Acoustic Sound Absorption Report



Material thickness:	9 mm (3/8 inches)
Number of baffle objects:	6
Spacing:	12 inches apart
NRC:	**1.10**
SABINS Per Lineal Foot:	**1.33**
SABINS Per Lineal Meter:	**4.35**

Sound Absorption Coefficients (ASTM C423-17)

NRC	125	250	500	1000	2000	4000
1.10	**0.2**	**0.39**	**0.64**	**0.92**	**1.17**	**1.29**

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Sustainability

EzoBord's Commitment to the Environment

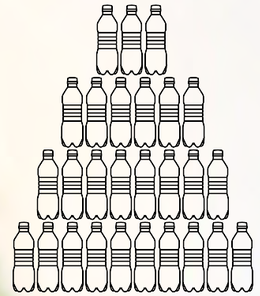
There are approximately 50 billion water bottles consumed around the world each year, and only about half of those get recycled. The rest end up in landfills, littered through our neighborhoods, or floating in our oceans.

Bottled water consumption has more than doubled since 2000; in 2015 there was the equivalent of more than 5 bottles of water consumed for every person in the USA every single week. This, of course, means that the amount of oil required to produce the energy used for the water bottling process continues to grow. In 2007, the last year global statistics of oil consumption were available, between 32 million and 54 million barrels of oil were used to produce the bottled water that was consumed in the USA alone. This energy is used to make the bottles from PET pellets (1 million tonnes in the USA), treat water, bottle the water, label the bottles and transport the bottled water. Most of the energy consumption occurs in the creation of the bottles themselves.

To help in the lifecycle of this plastic product, we've chosen to manufacture our material so that it recycles these PET bottles. We're doing our part to reduce the waste. This acoustical and tackable material is made from PET bottles in a zero-waste process with post industrial recycling. An environmentally friendly, sustainable and waste reduced alternative to traditional acoustical/tackable material that looks great in any office, education or open space installation.

ezoBord is:
• Low VOC
• Formaldehyde Free

Did you know:
For every pound of recycled PET bottles (approximately 23), energy use is reduced by 84% and greenhouse gas emissions are reduced by 71%.



+/- 27 PET BOTTLES
are used to make one 9mm thick ezoBord sheet

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Specifications

Luminaire

Housing: Rigid extruded aluminum body, 2.0mm (0.08”) nominal wall thickness. Aluminum end caps.
Optical System: Metalumen luminaires are designed to utilize leading edge LED technology combined with luminaire optimized reflectors and our custom diffusers, resulting in industry leading optical performance.
CRI: 83+ for 3500K, 80 minimum for all CCTs in standard configurations.
Lumen Maintenance: Minimum 50,000h with TM-21 lumen maintenance of 85% @ 25°C ambient temperature (calculated based on IESNA LM-80-08 LED test data). L70: ≥60,000hrs.

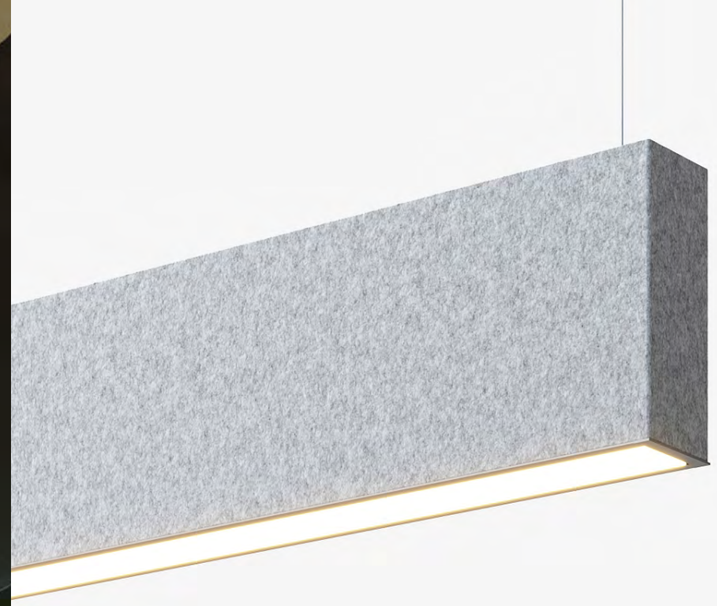
Paint Finish: Standard white finish. For custom finish, contact factory.
Electrical: Factory prewired with easy wire quick connect sections.
Voltage: 120V, 277V, 347V (Consult factory), UNV (120–277V)
Drivers: Metalumen offers 0-10V dimming* as a standard on our entire LED product offering. Dimming range is 1%-100%. Power factor is > 90%. Class 2 rating. Drivers are integral.
Environment: Suitable for dry or damp locations.

**Standard drivers compatible with passive/sinking dimmers. Please contact Metalumen if active/sourcing dimmer support is required.*

Baffle Material

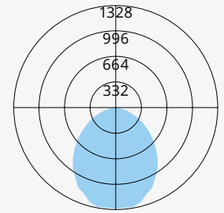
Composition: 100% PET (min. 50% recycled content)
Thickness: ⅜” (9mm) | ±0.5mm
Weight: ⅜” (9mm) sheet: 8.4lbs (3.8kg) | ±5%
Hardness: 60-65 (Shore C)
Fire Testing:
• North America:
- ASTM E-84 Class A*
- CAN ULC S102-10
• Europe and UK:
- EN13501-1: 2007
Acoustics: Refer to ASTM C423-17 test charts for specific absorption coefficients. ⅜” (9mm): NRC 0.75 (subject to mounting conditions)

Product Variances: Variation in fiber mix and colour may occur. All products will be supplied within commercial tolerances.
General: Tackable, impact resistant, bacteria resistant, moisture resistant,
installation friendly.
Environment: Made of polyester fiber, min. 50% of which comes from recycled water bottles which contributes to LEED MR Credit and BREEAM Health and Wellbeing, Materials points due to recycled content, acoustic performance, and low emitting materials.
No VOC’s: CDPH v1.2 and REACH SVHC Compliant.



RAIL2-ACL

Lit
Direct



Meta Blanc

Color Temp: 3000K, 3500K, 4000K (90 CRI available)

Lengths: 2, 3, 4, 5, 6, 7, 8, Consult factory for continuous rows or custom length / configurations

Patterns: Consult factory

Optics: Meta Blanc (Opal diffuse lens)

Light Level (lm/ft): 500, 750, 1000
Consult factory for custom level

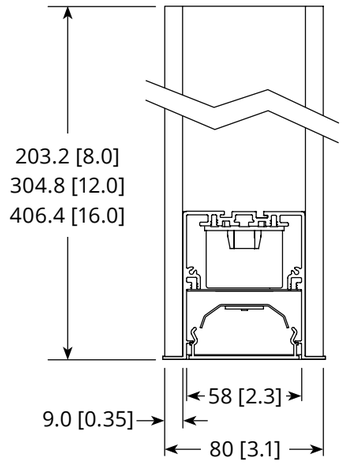
Circuitry: 1 Circuit, Emergency/Night Light, Emergency Battery Pack

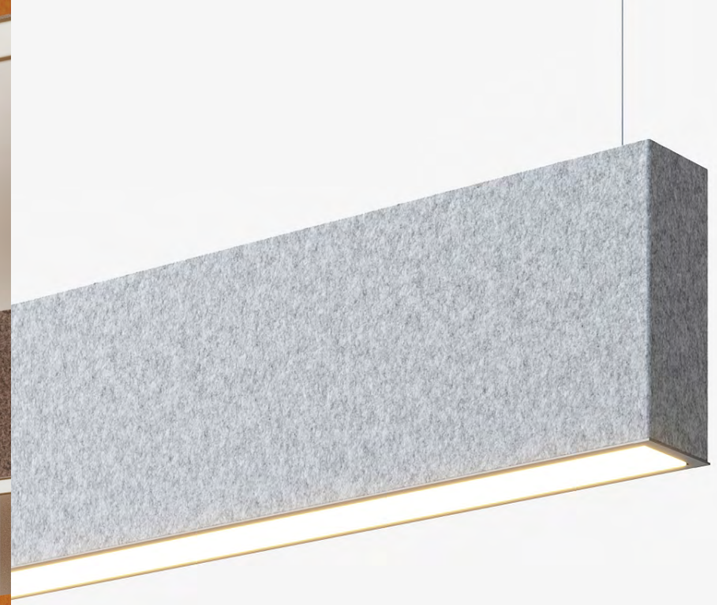
Mounting: Pendant Aircraft Cable, Pendant Aircraft Cable for T-bar, Threaded Rod for T-bar, Threaded Rod for Unistrut

Options: 90 CRI

Weight: 0.95 kg/300mm [2.1 lb/ft]

Approvals: This product is cULus listed. All components are UL/CSA/QPS recognized or listed. RoHS compliant.

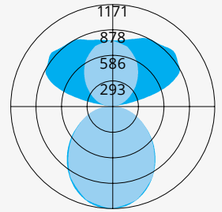




RM2DU-ACL

Lit

Direct / Indirect



Indirect: Batwing
Direct: Meta Blanc

Color Temp: 3000K, 3500K, 4000K (90 CRI available)

Lengths: 4, 5, 6, 7, 8, Consult factory for continuous rows or custom length / configurations

Patterns: Consult factory

Optics: Up: Batwing, Down: Meta Blanc (Opal diffuse lens)

Light Level (lm/ft): 1000, 1500, 2000
Consult factory for custom level

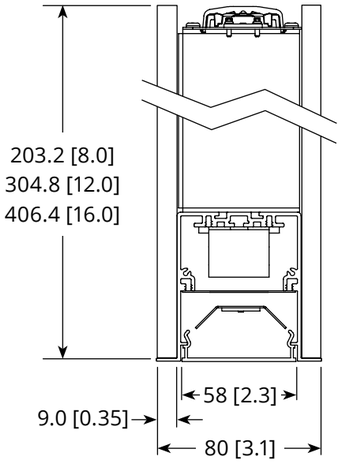
Circuitry: 1 Circuit, Up/Down Switching, Emergency/Night Light, Emergency Battery Pack

Mounting: Pendant Aircraft Cable

Options: 90 CRI

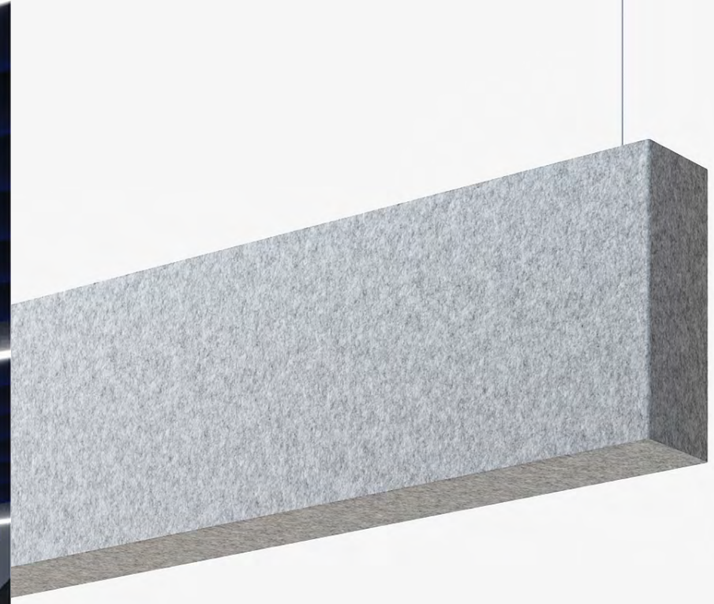
Weight: 0.95 kg/300mm [2.1 lb/ft]

Approvals: This product is cULus listed. All components are UL/CSA/QPS recognized or listed. RoHS compliant.



RAIL2-ACU

Unlit



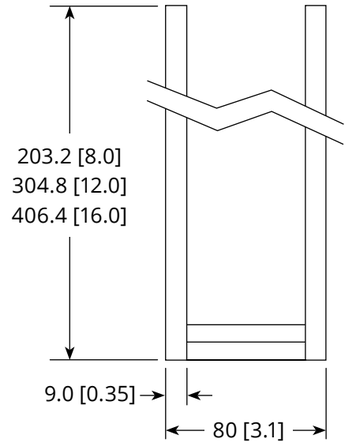
NRC:	**1.10**
SABINS	
Per Lineal Foot:	**1.33**
Per Lineal Meter:	**4.35**

Lengths: 2, 3, 4, 5, 6, 7, 8, Consult factory for continuous rows or custom length / configurations

Patterns: Consult factory

Mounting: Pendant Aircraft Cable, Pendant Aircraft Cable for T-bar

Weight: A ⅜" (9mm) sheet: 8.4lbs, (3.8kg) | ±5%



Baffle Options

Standard Colors

Additional colors are available for Unlit. Please consult factory.

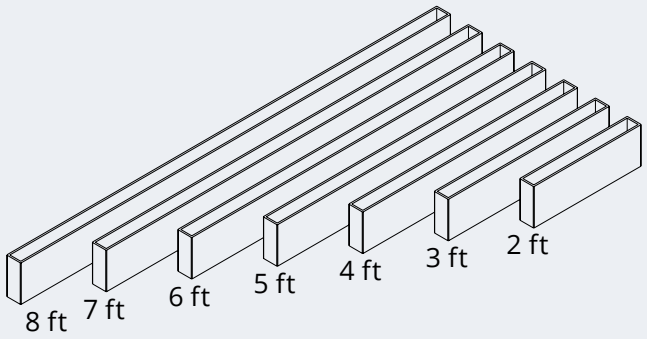
PB Pure Black
ES Ebony Slate
DG Dark Gray
DG Dark Grey
SG Silver Gray
CW Classic White
PI Polar Ice
LB Light Beige
DS Desert Sand
SD Sunny Days
TO Tiger Orange
RR Ruby Red
DP Deep Purple
MN Midnight Navy
GA Green Apple

Wood Grain Prints

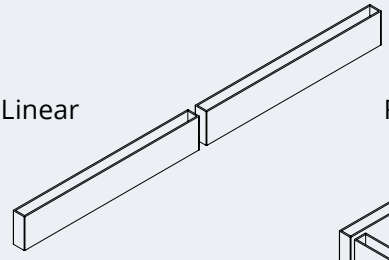
WWM White Maple
WNB Natural Birch
WHO Honey Oak
WAS Ash
WDO Dark Oak
WGO Grey Oak
WWA Walnut
WWG Wenge
WCM Cherry Mate
WAP Apple

Lengths & Configurations

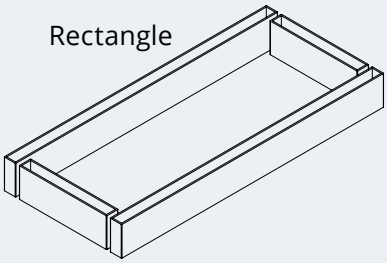
2 ft - 609.6 [24.0]
3 ft - 914.4 [36.0]
4 ft - 1219.2 [48.0]
5 ft - 1524.0 [60.0]
6 ft - 1828.8 [72.0]
7 ft - 2133.6 [84.0]
8 ft - 2438.4 [96.0]



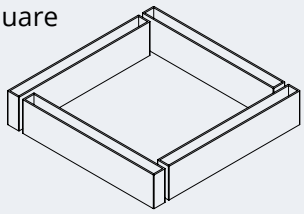
Linear



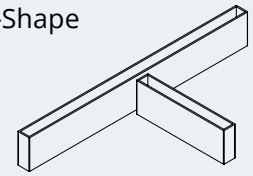
Rectangle



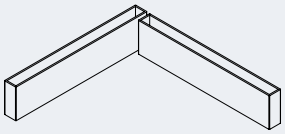
Square



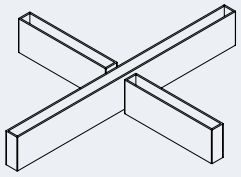
T-Shape



L-Shape



Cross / X-Shape



Metalumen
Ideas brought to light

EZO BORD
Ayrsonics NORTH AMERICA

For more information about our new products, please visit www.metalumen.com
Metalumen reserves the right to change specifications for product improvement without notice.
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