EXPERIENCE THE FEELING OF THE OUTDOORS... INSIDE

Cooledge has combined its lighting expertise, technology, and innovation to emulate the canopy of light we call the sky by delivering a lineup of simple FABRICated Luminaires for virtually every ceiling as well as a range of Specialty Illumination Solutions for applications where an even larger scale is desirable.

ILLUMINATION BY NATURE ILLUMINATION BY COOLEDGE

“I just wanted to reach out and say how awesome this luminous surface is... As an IT professional, I’m normally trapped in a room for hours on end perusing Google for answers to all of my problems. Since I can’t bring my desk outside, it’s nice to feel like I can bring the sun inside. It sounds crazy to express how much something as simple as lighting can affect how you feel.”

Justin Bajkowski - Fielding’s Culinary Group
For most of human history, we lived outdoors under a large luminous surface...the sky. Not only have our eyes been adapted to illumination from the sky but also our minds and our bodies.

The sky is a “canopy of light” that creates an entire experience encompassing visual, emotional, and biological contributions to human well being.

People spend almost 90% of their time indoors: we are missing the natural canopy of light!

COOLEDGE LUMINOUS CEILINGS BRING THE CANOPY OF LIGHT INDOORS

IMMERSIVE ILLUMINATION

There has been a lot buzz about circadian lighting in the past few years but the reality is that there are still many unanswered questions about specific physiological benefits and the best way to implement solutions.

What is not in doubt, is that illumination does have a significant impact on how people experience indoor spaces. Studies have shown that the right lighting can positively impact a shopper’s emotional response, an office worker’s productivity, or a long term care resident’s health. A common theme is the need to create environments that have the ability to adapt to the needs of the users including emulating the natural canopy of light that we are missing 90% of the time.

In order to achieve this goal, the ambient lighting must deliver all of the characteristics of “immersive illumination” which is comfortable, uniform, flicker free, tunable and dimmable light delivered on the scale of nature.
IMMERSIVE ILLUMINATION ISN’T SOMETHING YOU MEASURE WITH A LIGHT METER… IT’S AN EXPERIENCE

**Consistent Color Uniformity**
Best in class (typical) 2 SDCM color uniformity

**Tunable White**
Constant dimming at all CCTs in the tunable range

**Flicker Free**
Operational frequency of 3950 Hz is deep into the “safe zone”

**Surprising Levels of Illumination**
Distributed lighting provides high levels of illumination without visual discomfort

**Large Surface Area**
Creates the feeling of being under a canopy of light

**Uniform Light Output**
Best in class <10% variance edge to edge

**Low Glare**
Exceeds requirements to qualify for LEED point

**Exceptional Color Rendering**
CRI >90
R-values comparable to specialty products
Tunable White can be even better

**Deep Dimming**
Dimming down to 0.05% beats “dim-to-zero” (0.1%) offers from competitors

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IMMERSIVE ILLUMINATION REQUIRES HIGH QUALITY LIGHTING

Optical and spectral characteristics of LEDs are altered when the light they emit passes through a diffuser. Cooledge provides LM-79 light quality data for the actual light output from fabric diffuser not just the LEDs, including:

- Color Rendering
- R-Values
- TM-30-15
- Spectral Power Distribution
- Chromaticity

Diffuse general lighting ensures a subjective sense of well-being.

Prof. Jan Ejhad, Royal Institute of Technology in Stockholm;
Prof. Dr. Roland Greule, HAW Hamburg; Markus Felsch, Felsch Lighting Design
A COMPLETE PORTFOLIO OF PRODUCTS FOR LUMINOUS CEILINGS

Cooledge offers a full range of products to deliver luminous ceilings that create immersive illumination experiences that bring the outdoors... inside.

**FABRICATED LUMINAIRES**

Deliver the immersive illumination of luminous ceilings in simple, familiar formats that can be ordered and delivered to meet almost any schedule. Large-scale luminaires bring the feeling of the outdoors inside by creating artificial skylights in a grid ceiling or filling an open concept space with canopies of light that can also absorb sound, in some cases replacing other acoustic materials.

**SPECIALTY ILLUMINATION SOLUTIONS**

To fully emulate the outdoor experience, scale becomes the key factor. For large area luminous ceilings, Cooledge offers a range of illumination solutions that are assembled on-site by trained installers to create immersive environments on a scale worthy of nature.

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**FABRICated Luminaires**

<table>
<thead>
<tr>
<th>Specialty Installers Required</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sizes</td>
<td>Standard sizes up to a maximum of nom. 6’ x 9’ (1.8m x 2.7m)</td>
<td>Custom sizes to a maximum of 15.5ft x 161ft (4.7m x 49m)</td>
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<tr>
<td>Diffuser Materials</td>
<td>Stretched Fabric</td>
<td>Stretched Fabric</td>
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<td>Flux Levels</td>
<td>High, Medium</td>
<td>High, Medium, Low</td>
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<tr>
<td>Mounting</td>
<td>Suspended&lt;br&gt;Surface Mount&lt;br&gt;Recessed (Drywall/Plaster)&lt;br&gt;Grid (T-bar)</td>
<td>Suspended&lt;br&gt;Surface Mount&lt;br&gt;Flush Mount</td>
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</tbody>
</table>
**FABRICated Luminaires** bring the revolutionary benefits of immersive illumination to a wide range of ceiling types while using familiar industry standard installation methods.

**SUSPENDED**
Floating luminaires that deliver immersive illumination and an option for noise reduction.

**RECESSED**
Luminaires to maintain the clean lines of the ceiling and provide the look and feel of skylights.

**SURFACE MOUNT**
Luminaires to maintain the volume of a space with a low ceiling height while adding a natural feel to the environment.

**GRID (T-BAR)**
Integral luminaires that turn a regular T-bar ceiling into a canopy of light.

**SIZES BEYOND TRADITIONAL LIMITATIONS**
No longer restricted by the limitations of traditional luminaire design, only Cooledge delivers a range of sizes that allows designers to create a canopy of light for virtually any environment.

<table>
<thead>
<tr>
<th>Nominal Size (Imperial - ft)</th>
<th>Nominal Size (Metric - mm)</th>
<th>Suspended</th>
<th>Surface Mount</th>
<th>Recessed</th>
<th>Grid (T-bar)</th>
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<tbody>
<tr>
<td>4 x 4</td>
<td>1200 x 1200</td>
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<tr>
<td>4 x 6</td>
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<td>4 x 8</td>
<td>1200 x 2400</td>
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</tbody>
</table>

✔ For projects with longer timelines where non-standard sizes are a requirement, Cooledge will work with you to meet your specifications.
Cooleedge FABRICated Luminaires use simple, industry-standard mounting methods that are familiar to electrical installers across the globe.

**MOUNTING OPTIONS**

**SUSPENDED (CABLE OPTION)**

**SUSPENDED (THREADED ROD OPTION)**

**RECESSED**

**SURFACE MOUNT**

**A COUPLE OF THINGS ABOUT INSTALLATION**

- Optical and spectral characteristics of LEDs are altered when the light they emit passes through a diffuser. Cooleedge FABRICated Luminaires are shipped with a protective plastic cover during installation this cover should remain in place until the installation instructions call for removal.

- After removal of the protective plastic, clean cloth gloves must be worn to handle the luminaire.
REVOLUTIONARY AND SIMPLE

FABRICated Luminaires are revolutionary because they deliver illumination on the scale of nature, absorb sound (more later), and bring a unique look and feel to a space. But what may be even more revolutionary is that they do all of this while at the same time remaining simple and familiar to everyone.

SIMPLE TO UNDERSTAND
✓ They’re luminaires...but bigger and better

SIMPLE TO SPECIFY
✓ Standard sizes
✓ Standard options
✓ Standard prices
✓ Standard lead times

SIMPLE TO ORDER
✓ Short leadtimes

SIMPLE TO INSTALL
✓ Ready-out-of-the-box
✓ No specialty ceiling contractors required
✓ Industry standard mounting methods that are easily understood by electrical installers

POWER & CONTROL TRAY
Mounts directly to the luminaire or in a convenient remote location

INDUSTRY STANDARD MOUNTING METHODS

SAVE TIME ON INSTALLATION

NOT ONLY DO FABRICATED LUMINAIRES LOOK FANTASTIC BUT THEY CAN SAVE YOU MONEY ON INSTALLATION.

Fewer Cooledge FABRICated Luminaires are needed to deliver the same levels of illumination as traditional point and line sources.

The result:  
✓ Fewer wiring points
✓ Fewer mechanical attachments

Analysis: General Illumination in an Open Concept Office Space

Points & Lines
✓ 363 luminaires
✓ Mixture of troffers, linear pendants, linear recessed, track, downlights, and cylindrical pendants

Cooledge FABRICated Luminaires
✓ 173 luminaires
✓ 4 sizes
Wiring points reduced by 52%

Check out our Installation Guide Videos at www.cooledgelighting.com/fabricated-luminares
To fully emulate the outdoor experience, scale becomes the key factor. For large area luminous ceilings, Cooledge offers a range of illumination solutions that are assembled on-site by trained installers to create immersive environments on a scale worthy of nature.

**SUSPENDED**
Large scale solutions assembled on-site and hung from cable or threaded rods.
*Rectangles feature Infinity Edge Technology*

**SURFACE MOUNT**
Large scale solutions assembled on-site to maximize the feeling of openness or to blend with the ceiling finish.
*Rectangles feature Infinity Edge Technology*

**FLUSH MOUNT**
Solutions are mounted from wall-to-wall across a ceiling cavity to deliver continuous immersive illumination.
*Curves and Round Shapes Available*
Specialty Illumination Solutions are installed by Cooledge certified installers using industry-standard mounting methods that are easily incorporated into ceiling designs.

**Surface Mount - Rectangle Infinity Edge**
- Cooledge (LED) Lighting System
- Aluminum Frame
- Knife Edge
- Trim / Fascia
- Cooledge Diffuser Fabric
- Fastener (Screw, Staple)

**Surface Mount - Curved/Round/Circle**
- Cooledge (LED) Lighting System
- Aluminum Frame
- Knife Edge
- Trim / Fascia
- Cooledge Diffuser Fabric
- Fastener (Screw, Staple)

**Suspended - Rectangle Infinity Edge (Cable Option)**
- Cooledge (LED) Lighting System
- Aluminum Frame
- Knife Edge
- Trim / Fascia
- Cooledge Diffuser Fabric
- Cooledge Tile Mounting Fastener (Screw, Staple)
- Non-Conductive Material (e.g., Drywall, Plywood) by Others

**Suspended - Curved/Round/Circle (Cable Option)**
- Cooledge (LED) Lighting System
- Aluminum Frame
- Knife Edge
- Trim / Fascia
- Cooledge Diffuser Fabric
- Cooledge Tile Mounting Fastener (Screw, Staple)
- Non-Conductive Material (e.g., Drywall, Plywood) by Others

**Suspended (Threaded Rod Option)**
- Cooledge (LED) Lighting System
- Aluminum Frame
- Knife Edge
- Trim / Fascia
- Cooledge Diffuser Fabric
- Cooledge Tile Mounting Fastener (Screw, Staple)
- Non-Conductive Material (e.g., Drywall, Plywood) by Others

**Flush Mount**
- Cooledge (LED) Lighting System
- Aluminum Frame
- Knife Edge
- Trim / Fascia
- Cooledge Diffuser Fabric
- Cooledge Tile Mounting Fastener (Screw, Staple)
- Non-Conductive Material (e.g., Drywall, Plywood) by Others

**Surface Mount - Curved/Round/Circle**
- Cooledge (LED) Lighting System
- Aluminum Frame
- Knife Edge
- Trim / Fascia
- Cooledge Diffuser Fabric
- Cooledge Tile Mounting Fastener (Screw, Staple)
INTRODUCING THE “INFINITY EDGE”

Cooledge asked specifiers what is the most important design feature they wanted to see in a ceiling luminaire. The Overwhelming #1 Response: a clean knife-edge without shadows or dark spots.

A PROPRIETARY DESIGN DELIVERS EVEN ILLUMINATION FROM EDGE TO EDGE OF EVERY FABRICATED LUMINAIRE.

TUNABLE WHITE: CONTROL ON THE SCALE OF NATURE

CREATING AN ENVIRONMENT THAT EMULATES AN OUTDOOR EXPERIENCE REQUIRES THAT THE AMBIENT ILLUMINATION CHANGE TO MATCH THE TIME OF DAY.

MORNING  MID-DAY  EVENING
**C-TUNE TECHNOLOGY**

Cooledge Luminous Ceiling products incorporate our proprietary C-Tune technology to enable tunable white for projects where the cost or complexity of alternative products makes their use impossible.

C-Tune simplifies wiring and employs the same components as our static color temperature products to significantly increase affordability, allowing you the flexibility to create multiple user experiences in the same space without breaking your budget.

Cooledge technology enables deep dimming at any chosen CCT within the tunable range.

**COOLEDGE C-Tune Technology**

Combines control of the warm and cool channels into a single output, reducing installation errors and significantly increasing the affordability of tunable white products.

**COOLEDGE C-Tune for Dim-to-Warm**

A single dim level input is processed to provide a single output at a specific CCT for the chosen dim levels.

**COOLEDGE (the old way)**

An algorithm adjusts the warm and cool channels to ensure constant lumen output across CCTs and at any dimming level.

**OTHERS**

The cool and warm channels are adjusted to provide constant lumen output across CCTs.

**OTHERS**

Two channels are simply added together.
A NIGHTMARE OF NOISE: LUMINOUS CEILINGS CAN HELP

APPROXIMATELY 80 PERCENT OF OFFICE WORKERS BELIEVE THAT THEIR PRODUCTIVITY WOULD INCREASE IF THEIR WORKING ENVIRONMENT WAS MORE ACOUSTICALLY PRIVATE.*

The desire for “open concept” spaces combined with the trend toward using stone or tile for floors for durability and easy maintenance that results in low sound absorption and higher sound reflectance is a “nightmare of noise” in the making for offices, retail stores, and public areas.

In open spaces, an effective method of reducing sound pollution is to suspend acoustic clouds or baffles from the ceiling.

Suspended FABRICated Luminaires can replace acoustic clouds AND provide illumination in a single product saving the cost of the acoustic materials and avoiding the visual clutter created when trying to combine luminaires for general lighting in the same space as the sound absorbing fixtures.

All Cooledge Luminous Ceilings products have sound absorption properties that are superior to most materials used for interior spaces.

Most standard ceiling luminaires have no sound absorption capability and hence contribute to the “nightmare of noise”.

*American Society of Interior Designers; Armstrong World Industries, Inc.; DynaSound, Inc.; Milliken and Co.; Steelcase, Inc, 2005
**NOISE REDUCTION COEFFICIENT (NRC)**

The Noise Reduction Coefficient is a value used to characterize the ability of a material or object to absorb sound. It represents the average absorption for 4 sound frequencies typically encountered in the range of normal speech. A value of 0 means that all sound will be reflected, 0.5 means 50% of the sound is absorbed and 50% is reflected, while 1.0 means 100% of the sound is absorbed. In some regions, it is more common to refer to the ISO classification which identifies a specific range of sound absorption values using letters, with “Class A” being the best.

**FABRICated Luminaires** provide better acoustic performance than many typical building materials. For open concept spaces, Suspended models may be ordered with an NRC value (0.75) that delivers similar performance to acoustic ceiling materials.

**WE CREATE LUMINOUS CEILINGS,**

**AN INTERACTION BETWEEN LIGHT AND ARCHITECTURAL DIFFUSION MATERIALS THAT BRINGS THE FEELING OF THE OUTDOORS... INSIDE.**

For more information visit: www.cooledgelighting.com