



## Polar Roof Roof System

## A Light Weight Drop Panel Roof System



The Subzero Engineering Polar Roof system is uniquely designed to work under the fire suppression system by utilizing specially designed translucent panels.

In the event of a fire, the panels shrink and drop away to preserve the fire sprinkler pattern. The lightweight drop-in panels have a thickness of only 0.013" and are completely clear, allowing in the light from overhead lighting systems. The panels can be easily customized according to specific length and width.

As the Polar Roof containment system is modular in design, it can be easily attached to cabinets, doors, side wall systems, and even vinyl. The roof is also designed to attach to vinyl or hard wall material for missing cabinets or gaps. This makes it easy to install into almost any area in a data center. Additionally, they can be removed for easy access for overhead maintenance.

### Key Features & Options

- Custom Sizes
- Clear or Black Finish
- Lightweight
- Modular Design
- Clear Panels
- Fire Rated
- Drop Panels



V 1-0\_08/22/17

## Product Specifications

### Frame

#### Physical Properties

Property	Material	Result
Tensile Strength	Aluminum	22,000 psi

#### Features

- Typical size of 55.50" W x 79.50" L
- Frame attaches to top of server cabinets

### Shipping

#### Physical Properties

Property	Result
Weight	25-50 lbs approx
Components	5 Major Components

### Clear Panels

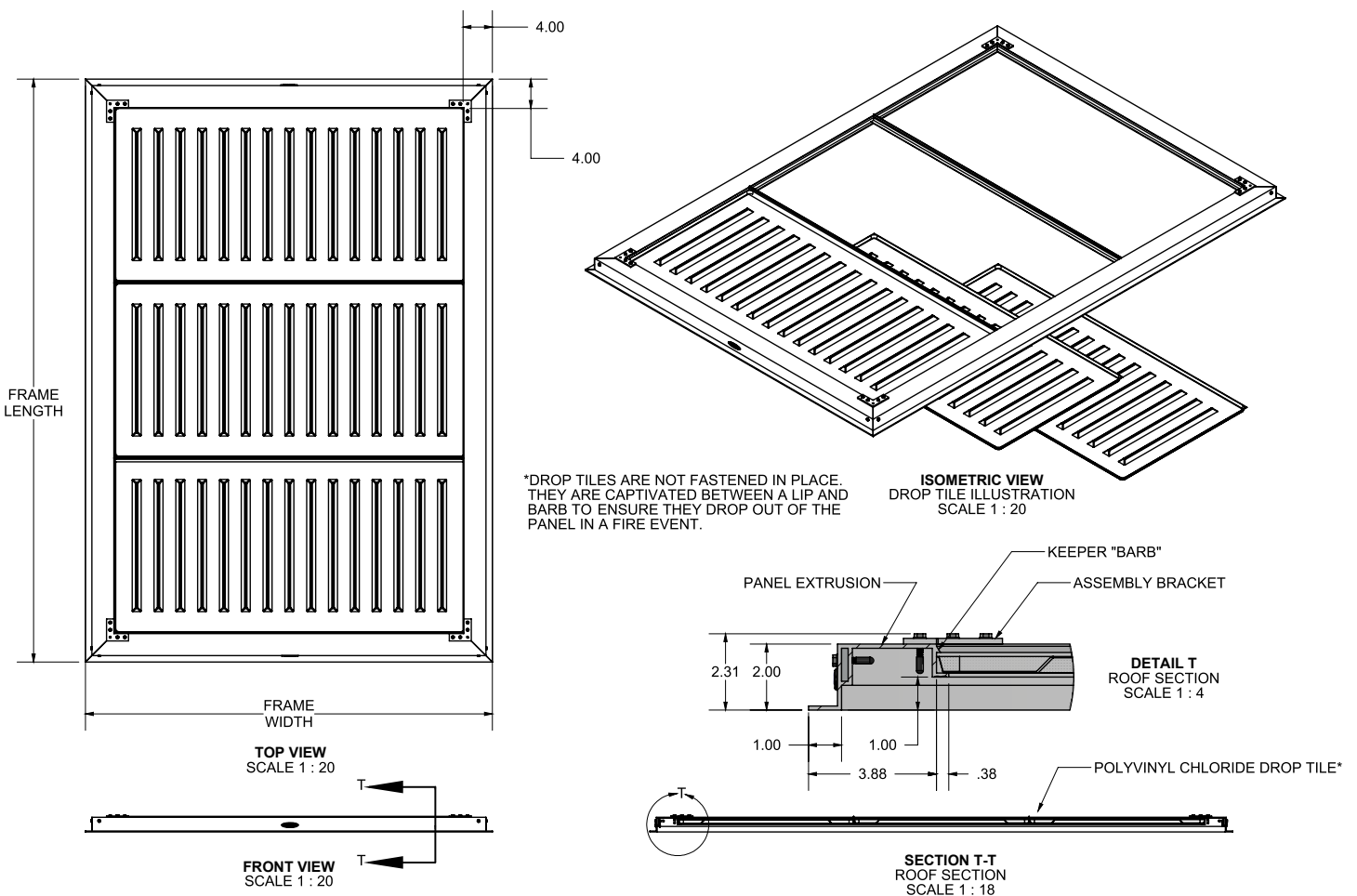
#### Physical Properties

Property	Units	Result
Thickness	Mills	15 Mil
Material	—	Polyvinyl Chloride
Light Transmittance	—	87.67%

#### Flammability

Property	Test	Result
Smoke Dev.	ASTM E84	170
Flame Spread	ASTM E84	20

## Drawings



## An Innovative Light Weight Drop Panel Roof System

### Clear Drop Panels

PVC panels are semi-rigid and allow 87% of light through.

### H-Channel

Panels are connected together using aluminum H-Channel.



### Raised Roof

The roof is raised 2.5" to allow for proper operation of cabinet doors.

### Anodized Aluminum

Clear or black anodized frames create a slick and professional look.





BLME.R4036

## Ceiling Panels for Use Beneath Sprinklers

[See General Information for Ceiling Panels for Use Beneath Sprinklers](#)

R4036

Molded plastic in the form of translucent panels.

	Type 1 Panel	Type 2 Panel
Flame spread	15-20*	25*
Smoke developed	125*	350*

\*May be used beneath sprinklers, subject to the authorities having jurisdiction.

[Last Updated](#) on 2002-10-07

This page and all contents are Copyright © 2005 by Underwriters Laboratories Inc.®

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Listed and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Designs and/or Listings (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from Underwriters Laboratories Inc." must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "Copyright © 2005 Underwriters Laboratories Inc.®"

An independent organization working for a safer world with integrity, precision and knowledge.



Approval Guide



**Building Insulations - Walls and Ceilings (FM Approval Class Numbers 4411, 4651, 4880, 4881, 4882)**

Insulating materials may occur in building construction to reduce heat or sound transmission through a wall, roof or floor-ceiling assembly. See Roofing Products and Assemblies Category for roof insulations.

The insulation listed below may be a surface treatment exposed to the building occupancy or as core material faced with metal, gypsum wallboard, concrete or masonry.

The listed assemblies are not intended as long-term fire walls or barriers since fire endurance was not evaluated. See SPECIFICATION TESTED PRODUCTS, ASTM E119 Standard, for hourly rated systems.

**Suspended Plastic Ceilings (Class Number 4651)**

Plastic suspended ceilings of translucent or opaque panels are used to conceal ducts, sprinkler piping, lighting fixtures or for decorative purposes. All products are of low combustibility. Because they are designed to be heat sensitive, promptly moving out of their setting, they will not significantly interfere with the operation of automatic sprinklers located above. When other building components and occupancy do not require sprinkler protection, these products may be used without creating such a need.

Restraining clips must not be used to hold the panels in their metal suspension frame. Clips which have been tested and FM Approved may be used for this purpose. Painting or coating the panels is prohibited since this may insulate and therefore hinder the immediate drop-out response to the early stage of a fire. However, panels which have been tested and FM Approved with a factory-applied coating may be used. Suspended plastic ceilings must be installed in accordance with all of the recommendations described in FM Global Loss Prevention Data Sheet 1-12.

The polystyrene ceiling tiles listed in Section B are expanded from the modified grade bead resins produced by the manufacturers listed in Section A. These products have met the fire test requirements of FM Approval Standard No. 4651.

Unless otherwise indicated in the listings, all polystyrene panels are nominal 1.0 lb/ft<sup>3</sup> (16.0 kg/m<sup>3</sup>) density.

**Panels**

**Ceilume Ceiling Tiles & Panels**

Ceilume Ceiling Tiles & Panels. Polyvinyl chloride plastic (PVC/vinyl) panels

**“0.013 inch” Ceiling Tiles. Nominal thickness of .013 inch (0.33 mm)**  
15 mil (0.381 mm) max thickness with optional dust covers.

Min 2x2 ft (0.6x0.6 m) Tile/panels. In white, opaque, all colors & finishes (Better Than Tin & Faux Wood)

Ceilume Tile/Panel Styles Including , but not limited to the following:

**“0.013 inch” Ceiling Tile Styles**

AcostaTherm (dust cover/back panel) , Anza, Apollo, Aristocrat, Astral, Circle Star, Catalina, Contempo, Convex, Dart, Diamond Plate, Domino, Doric, Dots, Electra, Fargo, Florentine, Four Square, Franciscan, Gradient, Grange, Grecian Square, Harlequin, Herman, Ivanhoe, Juniper, Medallion, Memo, Metro, Modulelux, Monterey, Moorish, Neptune, Orange, Orb, Petal, Plaza, Pluto, Polyline, Polysquare, Primitive, Regency, Ripple, Roman Circle, Roman Square, San Anselmo, Saturn, Septaline, Skyens, Southland, Stratford, Teahouse, Victorian, Wedgewood, Westchester, Westminster, Woodward, Zee

6/1/2017

BLME GuideInfo - Ceiling Panels for Use Beneath Sprinklers



ONLINE CERTIFICATIONS DIRECTORY

## BLME.GuideInfo Ceiling Panels for Use Beneath Sprinklers

[View Listings](#)

[Page Bottom](#)

### [Building Materials] (Surface-burning Characteristics) Ceiling Panels for Use Beneath Sprinklers

[See General Information for Surface-burning Characteristics](#)

#### GENERAL

This category covers ceiling panels certified with respect to surface-burning characteristics as indicated in the individual certifications.

Ceiling panels are intended to be installed beneath sprinklers without significantly affecting the suppression characteristics of the sprinkler system when the panels are installed in accordance with the installation instructions provided with each package of panels. Unless otherwise noted in the individual certifications, drop-out ceiling panels are intended for use with standard-response sprinklers only.

Ceiling panels consist of either the drop-out or the open-grid type. The drop-out panels have demonstrated, through test, the ability to fall from the suspended-ceiling-grid system when exposed to fire conditions beneath the grid system, and do not significantly affect sprinkler response and distribution characteristics when investigated to [UL Subject 723S](#), "Outline of Investigation for Drop-Out Ceilings Installed Beneath Automatic Sprinklers." Certifications based upon this test method utilize standard-response sprinklers rated 165°F. The open-grid panels either comply with the opening requirements included in ANSI/NFPA 13, "Installation of Sprinkler Systems," or have demonstrated, through test, not to significantly affect sprinkler response and distribution characteristics.

Authorities Having Jurisdiction should be consulted before installation.

#### PRODUCT IDENTITY

The following product identity appears on the product:

Ceiling Panel for Use Beneath Sprinklers

#### ADDITIONAL INFORMATION

For additional information, see Surface-burning Characteristics ([BIKT](#)) and Building Materials ([AABM](#)).

#### REQUIREMENTS

The basic standard used to investigate products in this category is [ANSI/UL 723](#), "Test for Surface Burning Characteristics of Building Materials."

#### UL MARK

The Certification Mark of UL on the product or package of products is the only method provided by UL to identify products manufactured under its Certification and Follow-Up Service. The [Certification Mark](#) for these products includes the UL symbol, the words "CERTIFIED" and "SAFETY," the geographic identifier(s), and a file number.

#### Additional Certification Markings

Products covered under this category are additionally marked with the following information:

For drop-out ceiling panels:

#### AS TO SURFACE-BURNING CHARACTERISTICS

+  
**WHEN INSTALLED IN ACCORDANCE WITH INSTALLATION INSTRUCTIONS PROVIDED WITH EACH CARTON,  
MAY BE USED BENEATH SPRINKLERS SUBJECT TO THE AUTHORITIES HAVING JURISDICTION**

+ Flame-spread and smoke-developed values applicable to the product

For open-grid ceiling panels:

#### AS TO SURFACE-BURNING CHARACTERISTICS

+  
**MAY BE USED BENEATH SPRINKLERS, SUBJECT TO THE AUTHORITIES HAVING JURISDICTION**

+ Flame-spread and smoke-developed values applicable to the product

#### Alternate UL Mark

6/1/2017

BLME.GuideInfo - Ceiling Panels for Use Beneath Sprinklers

The Classification Mark of UL on the product or package of products is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

**CEILING PANELS FOR USE  
BENEATH SPRINKLERS  
SURFACE BURNING CHARACTERISTICS  
+  
Control No.**

+ Flame spread and smoke developed values applicable to the product

The Classification Mark will also include one of the following statements:

- **For Drop-Out** — "When installed in accordance with installation instructions provided with each carton, may be used beneath sprinklers subject to the Authorities Having Jurisdiction."
- **For Open Grid** — "May be used beneath sprinklers, subject to the Authorities Having Jurisdiction."

\*\*\*\*\*

UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. UL shall not incur any obligation or liability for any loss, expense or damages, including incidental or consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Guide Information.

Last Updated on 2013-05-16

[Questions?](#)

[Print this page](#)

[Terms of Use](#)

[Page Top](#)

© 2017 UL LLC

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL's Follow-Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL's Follow-Up Service. Always look for the Mark on the product.

UL permits the reproduction of the material contained in the Online Certification Directory subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from the Online Certifications Directory with permission from UL" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "© 2017 UL LLC".

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION  
OFFICE OF THE STATE FIRE MARSHAL  
FIRE ENGINEERING - BUILDING MATERIALS LISTING PROGRAM  
**LISTING SERVICE**



**LISTING No.** 2200-1622:0100  
**CATEGORY:** 2200 -- CEILING SUSPENSION SYSTEMS/PANELS

Page 1 of 1

**DESIGN:** Model \*Ceilume Polyvinyl chloride plastic single and double sheets to form 2' x 2' to 2' x 4' nominal ceiling panels. Type I, single sheet; Type II, nested or welded sheets; Type III and IV, nested or welded double sheets with a laminated top sheet; Type V, top and bottom sheet mechanically laminated to a flexible vinyl center sheet. Refer to listee's data sheet for detailed product description and operational considerations.

**RATING:** Flame Spread; Type I: 20; Type II: 25; Type III: 35; Type IV: 20; Type V: 25  
Smoke Developed; Type I: 150; Type II: 350; Type III: 400; Type IV: 350; Type V: 350

**INSTALLATION:** In accordance with listee's printed installation instructions, applicable codes and ordinances and in a manner acceptable to the authority having jurisdiction.

**MARKING:** \*Cartons imprinted "Ceilume The Smart Ceiling Tile" , and bearing the UL File Number R-4036 label.

**APPROVAL:** Listed as a ceiling panel having a Class I or II rating.

**NOTE:** Formerly 2180-0174:001, 2200-0174:001

12-14-06 kv



This listing is based upon technical data submitted by the applicant. CSFM Fire Engineering staff has reviewed the test results and/or other data but does not make an independent verification of any claims. This listing is not an endorsement or recommendation of the item listed. This listing should not be used to verify correct operational requirements or installation criteria. Refer to listee's data sheet, installation instructions and/or other

Date Issued: **July 01, 2017** *Listing Expires* **June 30, 2018**

Authorized By: **DAVID CASTILLO**, Program Coordinator  
*Fire Engineering Division*