

# Acrylite® EndLighten

ACRYLIC SHEET

## Product Description

ACRYLITE® EndLighten acrylic sheet is engineered to provide exceptional edge lighting performance. Illuminated signs equipped with ACRYLITE EndLighten sheet emit evenly distributed light over the planar surfaces without engraving or surface treating. This enables the construction of extremely slim, lightweight and compact luminous panels with high light output. More and more designers of advertising are using these attractive slim illuminated signs to help obtain eye-catching performance around the clock.

- ACRYLITE EndLighten L sheet permits the manufacture of small to medium signs up to 24" (600 mm) wide.
- ACRYLITE EndLighten XL sheet permits the manufacture of larger signs up to 51" (1300 mm) wide.

## Properties

ACRYLITE EndLighten sheet provides the following outstanding properties:

- Brilliant uniform illumination
- Lightweight - half the weight of glass
- Easy to fabricate
- Strength - many times the impact strength of glass

## Advantages

ACRYLITE EndLighten sheet provides uniform illumination that is unsurpassed by comparable engraved or surface treated products. Additionally, edge-lit signs constructed with ACRYLITE EndLighten sheet offer a number of advantages compared with conventional backlit signs:

- Sign depths as small as .394" (10 mm)
- Easily changeable graphics
- One or two sided displays
- Lower manufacturing costs
- Greater ease of installation
- High luminous intensity without hot spots
- Energy savings
- Compliant with American Disabilities Act (ADA)

## Applications

ACRYLITE EndLighten sheet makes it possible to design completely new, ultra-slim lighting systems for:

- Illuminated advertising signs
- Luminous displays
- Directories
- Citylight posters
- Signs in bus shelters and transportation centers
- Large photographs
- Flat video display units
- Menu boards
- Shelving
- Wayfinding signs
- Light tables for graphic design
- Partitions
- and many other items...

## Construction

*Slim lightbox components using ACRYLITE EndLighten acrylic sheet:*

- Product frame/housing
- Light Source
- Graphic image on light-diffusing film or paper
- ACRYLITE EndLighten sheet
- Reflective backing

### Flip Frame Style Construction



### Hinged Style Construction



## Product Offering

**EndLighten L** for applications up to 24" (600 mm) wide

Thickness: .236" (6 mm); .315" (8 mm)

Sheet Size: 80" x 120" (2030 x 3050 mm)

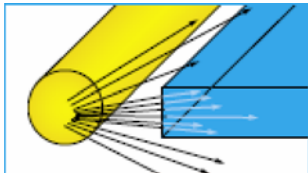
**EndLighten XL** for applications up to 51" (1300 mm) wide

Thickness: .315" (8 mm); .394" (10 mm); .472" (12 mm)

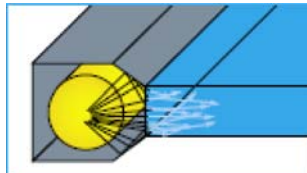
Sheet Size: 80" x 120" (2030 x 3050 mm)

## Suggestions for Use

### Advantages of reflectors for lighting the edges

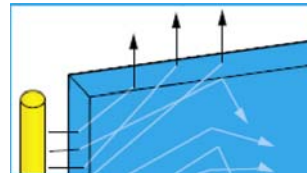


Without a reflector, part of the light is wasted

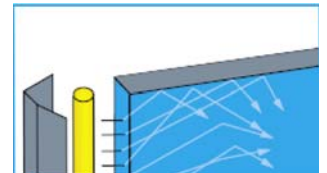


The reflector guides the light towards the edge of the sheet

### Advantages of reflective adhesive tape

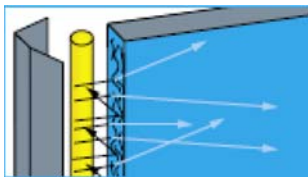


No reflective coating: Light leaves the sheet unused

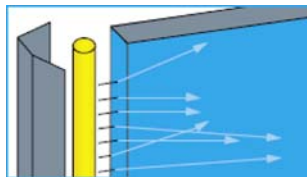


With reflective coating: Light is reflected back into the sheet

### Advantages of smooth, glossy edges for edge lighting

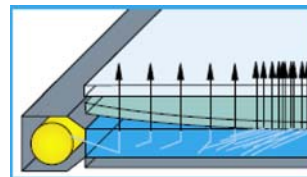


Rough edge: Some scattering on the sheet edge

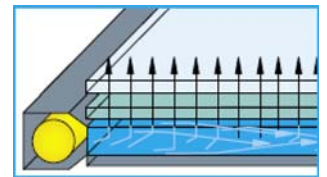


Smooth Edge: Very little scattering on the sheet edge

### Attaching the information carrier



Optical contact between Sheet / Poster: Optical distortions may occur.



No optical contact: Light is only emitted by the EndLighten sheet

## Reflective Materials

Available in multiple colors from a variety of suppliers. White reflective materials typically provide the best reflectance without influencing the appearance of the printed media. Recommended materials include:

- Grafix Plastics 10 mil white opaque rigid gloss vinyl
- 3M Light Enhancement Film 3635-100
- Gerber Scientific Products 280I Reflective Film
- Scotch, 3M, Metal Repair Tape, Industrial Grade Aluminum Tape (305NA)
- Venture Tape, 1 mil Aluminum Foil Tape, 1513CW NS

## Information Carrier (Graphics Media)

Light diffusing media is used to best direct light exiting the face of the sheet (typically at low angles) towards the observer for visibility from any angle. Many graphics media are available. The industry standard is Duratrans™ by Kodak.

## Sign Manufacturers & Component Suppliers

Many sign companies have developed proprietary framing systems to meet their design needs. Considerations include light source spacing and proper heat dissipation. Reference UL 48 for Electric Signs. Possible sources include:

### Complete and custom menu board and sign solutions

#### Posterloid

48-62 36<sup>th</sup> Street  
Long Island City, NY 11101  
800-651-5000  
[www.posterloid.com](http://www.posterloid.com)

#### Visual Graphic Systems, Inc.

500 Tenth Avenue  
New York, NY 10018  
800-203-0301  
[www.vgsonline.com](http://www.vgsonline.com)

### Variety of attractive, slim edge-lit sign products

#### Swingframe

151 South Main Street  
Freeport, NY 11520  
877-794-6499  
[www.swingframe.com](http://www.swingframe.com)

#### MDI Worldwide

38271 W Twelve Mile Rd.  
Farmington Hills, MI 48331  
800-228-8925  
[www.mdiworldwide.com](http://www.mdiworldwide.com)

## Light Sources & Comparative Performance

A variety of options are available to light the edges of the sheets. These include:

- Fluorescent lights, standard and high output in various sizes (T2, T4, and T5 lamps)
- Cold cathode fluorescents (includes miniature CCFLs and Neon)
- LEDs (in various intensities, colors, and beam angles)

Each lighting source offers certain advantages and disadvantages. Fluorescent lamps for example radiate more heat (than CCFLs) and typically have shorter life expectancies (10,000 – 20,000 hours) than either CCFLs (10,000 – 50,000 hours) or LEDs (up to 100,000 hours). LEDs are more durable than either fluorescents or CCFLs but are limited in the sheet sizes they can sufficiently illuminate.

## Below are references to lighting suppliers to aid in lighting selection.

### Fluorescent Lamps

Available from a variety of local electrical retailers.

#### CCFLs (*miniature ccfls*)

JKL Components Corporation  
13343 Paxton Street  
Pacoima, CA 91331  
800-421-7244  
[www.jkl lamps.com](http://www.jkl lamps.com)

Sunpark Electronics Corp.  
1850 W. 205<sup>th</sup> Street  
Torrance, CA 90501  
866-478-6775  
[www.sunpkco.com](http://www.sunpkco.com)

#### Neon

The EGL Company, Inc.  
100 Industrial Road  
Berkeley Heights, NJ 07922  
908-508-1111  
[www.egl-neon.com](http://www.egl-neon.com)

#### LEDs (*individual*)

Nichia, NSPW500CS – 5 mm lamp type white LEDs

#### LED Strips

(5 mm lamp type LEDs typically spaced ~3 per inch)

#### Agilight

3669 Porter Henderson Tr.  
San Angelo, TX 76905  
866-482-0203  
[www.extremeleds.com](http://www.extremeleds.com)  
[www.agilight.com](http://www.agilight.com)

#### GELcore

6180 Halle Drive  
Valley View, OH 44125  
216-606-6555  
[www.gelcore.com](http://www.gelcore.com)

#### SloanLED

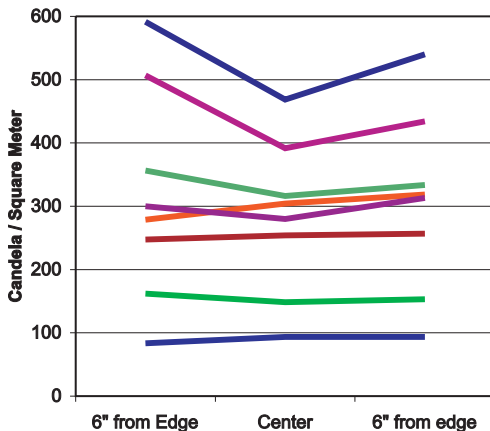
5725 Olivas Park Dr.  
Ventura, CA 93003  
888-747-4533  
[www.sloanled.com](http://www.sloanled.com)

#### Teledyne Lighting & Display Products

12964 Panama Street  
Los Angeles, CA 90066-6534  
800-563-4020  
[www.teledynelighting.com/products/led.asp](http://www.teledynelighting.com/products/led.asp)

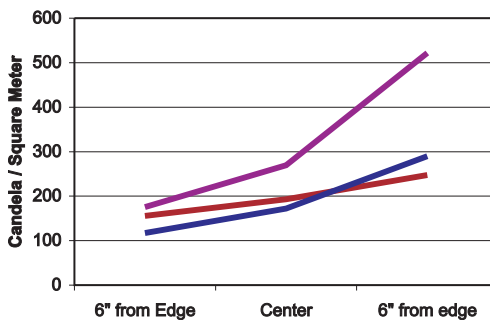
Below are light measurements based on tests with various light sources, sheet sizes, and lighting configurations.

ACRYLITE EndLighten sheet  
L v XL Comparison – Two Edges Lit, 24" x 24" Samples



- EndLighten L, Two T5 Lamps, White Reflective Backing
- EndLighten L, Two T2 Lamps, White Reflective Backing
- EndLighten XL, Two T5 Lamps, White Reflective Backing
- EndLighten L, Two T5 Lamps, No Backing
- EndLighten L, Two Dual CCFLs, White Reflective Backing
- EndLighten XL, Two T5 Lamps, No Backing
- EndLighten XL, Two Dual CCFLs, White Reflective Backing
- EndLighten L, Two Sides w/LEDs, White Reflective Backing

ACRYLITE EndLighten sheet  
L v XL Comparison – One Edge Lit, 24" x 24" Samples



- EndLighten L, One T5 Lamp, White Reflective Backing
- EndLighten XL, One T5 Lamp, White Reflective Backing
- EndLighten L, One T2 Lamp, White Reflective Backing

Note: All fluorescent lighting used in above trials are high output (HO) lamps. High output lamps generally provide twice as much lighting as standard fluorescent bulbs. Measurements above were done under specific conditions and cannot adequately be compared to other measurements made under different conditions.

**COMPATIBILITY**

Like other plastic materials, ACRYLITE® acrylic sheet is subject to crazing, cracking or discoloration if brought into contact with incompatible materials. These materials may include cleaners, polishes, adhesives, sealants, gasketing or packaging materials, cutting emulsions, etc. For information on a specific product contact the CYRO Technical Center.

**FIRE PRECAUTIONS**

ACRYLITE acrylic sheet products are combustible thermoplastics. Precautions should be taken to protect these materials from flames and high heat sources. ACRYLITE sheet usually burns rapidly to completion if not extinguished. The products of combustion, if sufficient air is present, are carbon dioxide and water. However, in many fires sufficient air will not be present and toxic carbon monoxide will be formed, as it will when other common combustible materials are burned. We urge good judgment in the use of these versatile materials and recommend that building codes be followed carefully to assure they are used properly.

**IMPORTANT NOTICE**

The information and statements contained herein are not to be taken as a warranty or representation for which we assume legal responsibility nor as permission, inducement or recommendation to practice any patented invention without a license. The information is offered solely for your consideration investigation and verification. Users should perform their own testing and verification to determine the applicability and suitability of the information and any products for their own particular purpose.

For additional product information, or to locate a local authorized CYRO distributor, please call 800.631.5384 or visit [www.cyro.com](http://www.cyro.com).

**HEADQUARTERS**

CYRO Industries  
379 Interpace Parkway  
PO Box 677  
Parsippany, NJ 07054-0677  
800.631.5384

**CANADIAN SALES OFFICE**

108 Attwell Drive  
Suite 101  
Etobicoke, ON  
M9W 6A9  
905.677.1388  
800.268.4743



**TECHNICAL SUPPORT**

Visit the TechKnowledge Center at [www.cyro.com](http://www.cyro.com) for immediate access to FAQ, technical information, tips and hundreds of other facts about acrylic sheet products.