

Visulite® 2200 Series



Interior Use Only

3.1.100
08/10

General Information

The internally illuminated Directory and Display System developed by APCO is known by the trade name Visulite. Handcrafted from pre-engineered components, each unit can be constructed to meet your specifications. Text and graphics appear to be suspended dramatically within the depths of a black background. Tinted solar glass and a fluorescent light source evenly illuminate film negative graphics while concealing the background and inner workings. The imbalance of light creates the illusion that graphics are floating.

Features

- Eight (8) Aluminum Door Shapes
- Two (2) Brass Door Shapes
- Concealed, Stainless Steel Hinge
- Tempered Safety Glass (1/4") Thick
- Gas Cylinder "Assists" for Large Doors

Finishes

- Black, Bronze or Natural Satin Anodized
- Solid Brass:
 - Polished or Satin
 - Architectural Bronze (to match Alloy 280)
 - Commercial Bronze (to match Alloy 220)
 - Patina (Antique)
 - Chrome Plated Brass

Film Negative Message Strips

- Two Standard Sizes: 1/2" x 7" & 1" x 11"
- Changeable Message Strip Cartridge - No Light Leaks (Patent No. 4,653,209)
- White or Colored Illuminated Graphics
- Unlimited Type Styles
- Updatable with Prepaid Reorder System

Graphics

- Changeable Cartridges/Header
- Photo Transparency Displays

Electrical

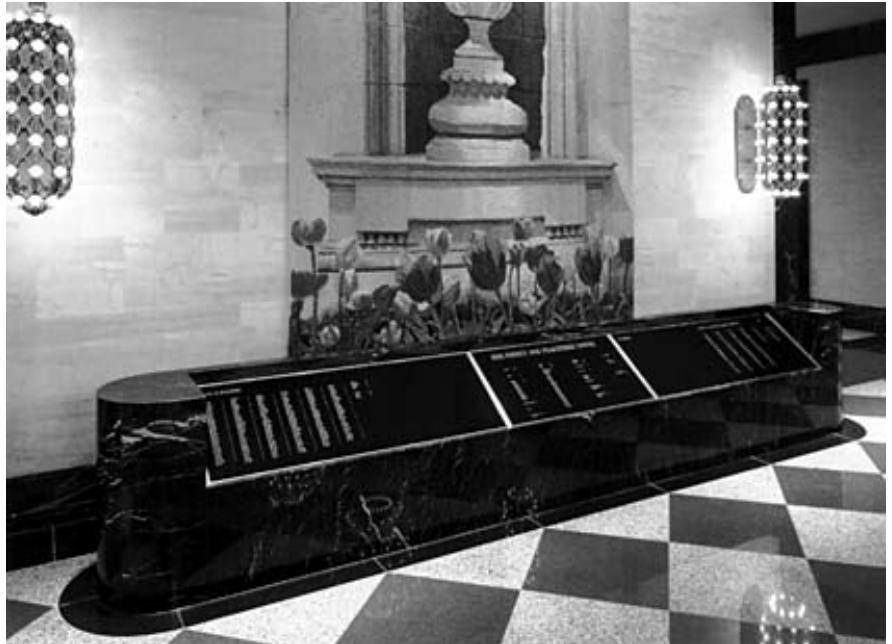
- UL Listed
- 120V (or) 277V

Three (3) Lock Options

- Standard, Concealed Dual Lock
- APCO Concealed Lock
- Conventional Keyed Lock

Services

- Direct Factory Support
- Engineering
- Custom Shop/Detail Drawings
- CSI (Construction Specification Institute) Specifications Available
- 5 Year Limited Warranty



Visulite directories are designed to operate in areas with low ambient lighting. Avoid placing Visulite directories in brightly lit locations or where subject to direct lighting.

Three wall mount configurations are available.

Semi-Recessed directories expose the door frame, allowing it to protrude 1-1/2" from the wall surface. A decorative reveal is provided to offset the dimensional variance between the directory's housing and the wall cavity.

Full Recessed directories mount flush with the wall surface. As a standard, a 1" wide Continuous Angle Trim is secured to the reveal and is used to capture unfinished edges of a cavity's rough opening. When the cavity has finished edges and returns, the Continuous Angle can be eliminated. If the edges are finished, but the returns are not (i.e. openings in granite wall panels), a 1/8" wide Flat Bar Trim is available. In all full recessed applications, a 1" wide reveal is attached to the housing which provides necessary clearance for proper door operation.

Surface Mount directories are attached directly to the wall surface. The Low Profile (LP) cabinet housing must be used to comply with ADA (Americans With Disabilities Act) requirements, limiting all protruding objects to 4" maximum from face of finished wall.

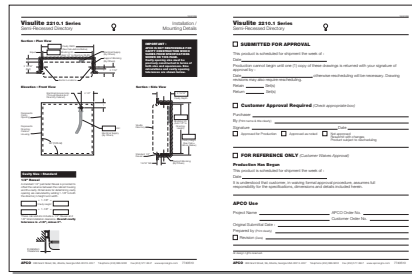
Console Mount directories are typically installed at an angle into either an existing or new cabinet structure. APCO's Engineering Department should be consulted for proper fit. All console directory doors are top hinged.

Pedestal Mount directories are freestanding structures supported by double, 8" radius aluminum posts. All pedestal directory doors are top hinged. Smaller, lighter weight doors are supported with folding prop-rods while larger, heavier doors utilize gas cylinder "assists". Standard 30 degree mounting reduces unwanted glare from overhead lighting when viewed from the most readable angles. The 27" minimum clearance at the front edge of the housing complies with ADA guidelines.

Maximum size recommended for a Single Pedestal directory is 40"H. x 33-3/4"W. Larger units are Double Pedestal mounted.

Shop Drawings

Technical Shop Drawings are available on our website or in printed form. Drawings include orthographic illustrations separated into each product series. Basic construction details, operating clearances and formulas for calculating mounting requirements are also provided. The "Specification" page allows selection from a wide variety of standard components. An "Installation / Mounting Details" page is used for coordinating mounting details with the contractor.



APCO's engineering services will adapt Visulite products to your requirements. Free consultation is available nationwide to assist in calculating size and strip capacity.

To determine proper cavity size for a recessed directory, refer to "Calculating Unique Conditions" later in this section

Installation Instructions

Installation instructions are provided with every Visulite directory.

Care and Maintenance Instructions

Servicing is made simple by use of standard electrical components and easy to change graphics. A simple maintenance kit is supplied for film negative graphic touch-ups. Providing care and maintenance instructions are followed carefully, the Visulite directory will last for many years.



2210.1/2210.1LP
Semi-Recessed



2210.2/2210.2LP
Full Recessed



2210.3/2210.3LP
Surface Mounted



2240.1
Console Mount



2240.2
Single Pedestal Mount



2240.3
Double Pedestal Mount



The charts shown list cabinet sizes, message strip capacities and approximate product weight. Cabinet heights are based on fluorescent lamp lengths. Cabinet widths are based on NS-50 (1/2"x 7") and NS-100 (1"x 11") film negative message cartridge widths. Weights apply to standard and Low Profile (LP) cabinets.

Message strip quantities shown include a standard 4" header within the display configuration. By eliminating the header, NS-50 strip capacity increases 7 strips per column. NS-100 strip capacity increases 3 to 4 strips per column.

Note that three columns of NS-50 (1/2" x 7") strips utilize the same area as two columns of NS-100 (1" x 11") strips.

Optional Split Message Strips allow capacities to virtually double. (See "Display Components" later in this section.)

Wall mounted cabinet heights exceeding 52" should be discouraged since message strips will be too high and/or too low for comfortable viewing.

APCO recommends top hinged Visulite cabinets not exceed 40" in height due to excessive weight and installation difficulties.

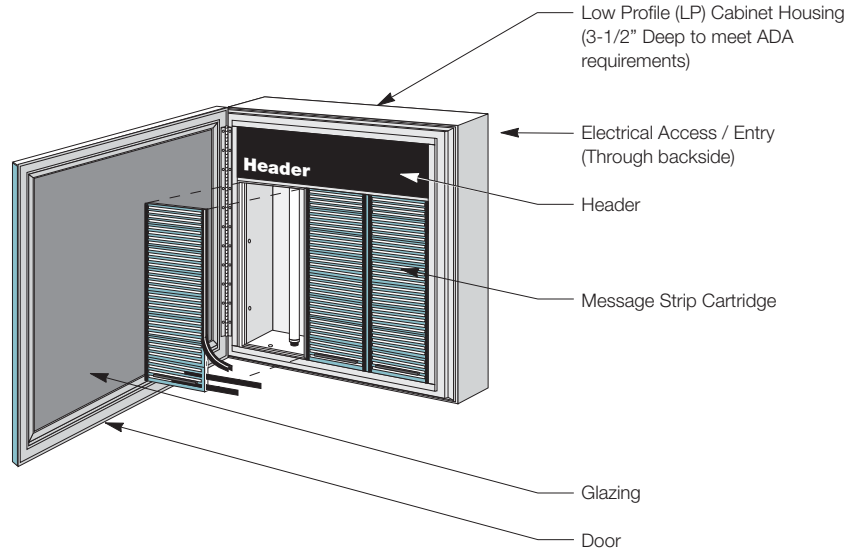
Custom cabinet sizes are available upon request.

NS-50 (1/2" x 7")		Message Strip Capacities				
Column Capacity	Cabinet Width	Standard and LP Cabinet Heights				
		22"	28"	32"	40"	52"
1	10-11/16"	20 (35 lbs.)	30 (40 lbs.)	36 (45 lbs.)	49 (50 lbs.)	68 (60 lbs.)
2	18-3/8"	40 (50 lbs.)	60 (55 lbs.)	72 (60 lbs.)	96 (70 lbs.)	136 (85 lbs.)
3	26-1/16"	60 (65 lbs.)	90 (70 lbs.)	108 (80 lbs.)	147 (90 lbs.)	204 (110 lbs.)
4	33-3/4"	80 (80 lbs.)	120 (90 lbs.)	144 (95 lbs.)	196 (110 lbs.)	272 (130 lbs.)
5	41-7/16"	100 (95 lbs.)	150 (105 lbs.)	180 (115 lbs.)	245 (130 lbs.)	340 (155 lbs.)
6	49-1/8"	120 (110 lbs.)	180 (120 lbs.)	216 (130 lbs.)	294 (150 lbs.)	408 (180 lbs.)
7	56-13/16"	140 (125 lbs.)	210 (135 lbs.)	252 (150 lbs.)	343 (170 lbs.)	n/a
8	64-1/2"	160 (140 lbs.)	240 (155 lbs.)	288 (165 lbs.)	392 (190 lbs.)	n/a
9	72-3/16"	180 (155 lbs.)	270 (170 lbs.)	324 (185 lbs.)	441 (110 lbs.)	n/a
10	79-7/8"	200 (170 lbs.)	300 (190 lbs.)	360 (200 lbs.)	490 (230 lbs.)	n/a
11	87-9/16"	220 (185 lbs.)	330 (105 lbs.)	396 (220 lbs.)	539 (250 lbs.)	n/a
12	95-1/4"	240 (200 lbs.)	360 (220 lbs.)	432 (240 lbs.)	588 (270 lbs.)	n/a

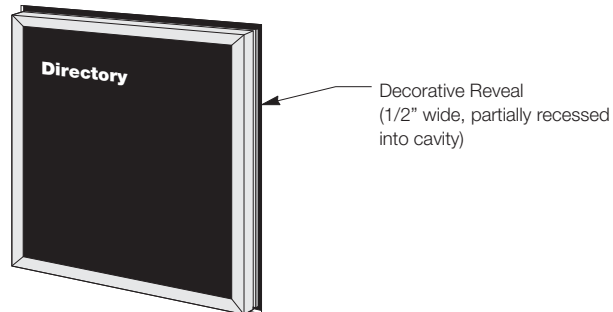
NS-100 (1" x 11")		Message Strip Capacities				
Column Capacity	Cabinet Width	Standard and LP Cabinet Heights				
		22"	28"	32"	40"	52"
1	14-17/32"	10 (40 lbs.)	15 (45 lbs.)	19 (50 lbs.)	26 (60 lbs.)	36 (70 lbs.)
2	26-1/16"	20 (60 lbs.)	30 (65 lbs.)	38 (70 lbs.)	52 (85 lbs.)	72 (100 lbs.)
3	37-19/32"	30 (75 lbs.)	45 (90 lbs.)	57 (95 lbs.)	78 (110 lbs.)	108 (130 lbs.)
4	49-1/8"	40 (95 lbs.)	60 (110 lbs.)	76 (120 lbs.)	104 (135 lbs.)	144 (160 lbs.)
5	60-21/32"	50 (115 lbs.)	75 (130 lbs.)	95 (140 lbs.)	130 (165 lbs.)	n/a
6	72-3/16"	60 (135 lbs.)	90 (155 lbs.)	114 (160 lbs.)	156 (190 lbs.)	n/a
7	83-23/32"	70 (155 lbs.)	105 (175 lbs.)	133 (185 lbs.)	182 (215 lbs.)	n/a
8	95-1/4"	80 (175 lbs.)	120 (200 lbs.)	152 (215 lbs.)	208 (240 lbs.)	n/a
9	n/a	n/a	n/a	n/a	n/a	n/a
10	n/a	n/a	n/a	n/a	n/a	n/a
11	n/a	n/a	n/a	n/a	n/a	n/a
12	n/a	n/a	n/a	n/a	n/a	n/a

Product Descriptions

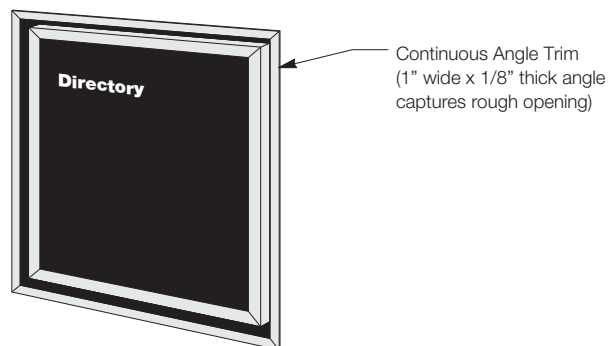
Surface Mounted Directory



Semi-Recessed Directory



Full Recessed Directory

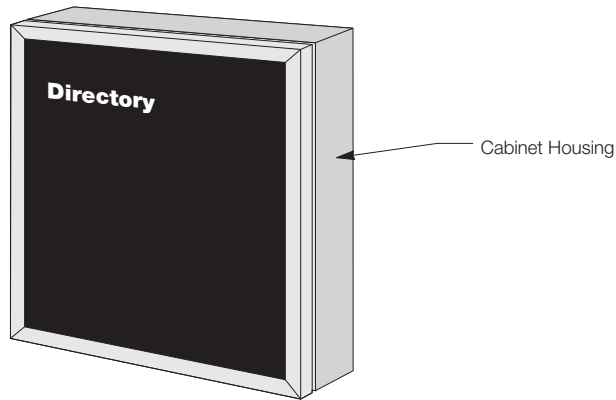


Cabinet Housing

Two cabinet depths are available; 5-1/2" and 3-1/2" Low Profile (LP). Each custom aluminum extrusion is mitered at 45 degrees and welded to provide a smooth exterior finish. A thin sheet of aluminum covers the cabinet's back side. This back plate is coated white on the inside for light reflectiveness. Removable covers, of the same white aluminum, are used to conceal all electrical raceways.

Cabinet Housings are easily manufactured to adapt to most any custom installation.

Ventilation is provided through vent holes in the cabinet, hidden beneath the door frame.



Standard Finishes

The following finishes are standard for the extruded aluminum Cabinet Housing:

- Natural Satin Anodized
- 313 Dark Bronze Anodized
- 315 Black Anodized

Optional Finishes

Once assembled, the housing can be clad with a variety of decorative metals. Below is a list of optional finishes available for cabinet cladding.

Aluminum

- Polished, Uncoated (APU)
- Satin (Brushed), Clear Coated (ASC)

Brass (Yellow)

- Polished, Uncoated (BPU)
- Polished, Clear Coated (BPC)
- Satin (Brushed), Clear Coated (BSC)
- Chrome Plated (BCHR)
- Patina (Antique), Clear Coated (BAC)**

Brass (Red)

- Polished, Uncoated (RBPU)*
- Polished, Clear Coated (RBPC)*
- Satin (Brushed), Clear Coated (RBSC)*

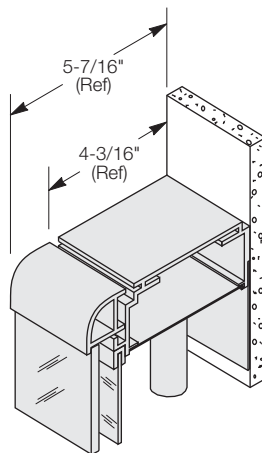
Acrylic Lacquer is used for Clear Coated finishes

* Matched to 90/10 Commercial Bronze

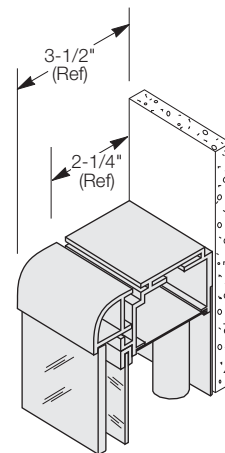
** Simulated Oxidized Bronze (Supply Sample for Accurate Match)

Polyurethane paint is another optional finish. Standard colors are available or custom colors can be matched.

Standard Cabinet Housing



Low Profile (LP) Cabinet Housing



Doors, Door Supports & Glazing

Doors

Each Visulite is equipped with a single door. Profile selection includes any one of eight shapes shown at right. Corners are mitered and welded to present an almost seamless appearance. All profiles are available in aluminum. SD and RD are available in brass.

The AccentTrack™ door profile is designed with a slot to accept virtually any insert material 1" wide and up to .090" thick. The decorative "accent" material can be furnished by APCO or by the customer.

The Floating Glass door exhibits a "frameless" look. The extrusion profile itself is finished black and is unseen, acting primarily as a support for the glazing. It is only available in a full recessed mounting configuration, either vertically within a wall cavity or at an angle within a console.

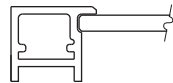
Unlike some competitive units, Visulite incorporates a stainless steel continuous hinge that is completely concealed when the door is closed. Hinge location is determined by door size. Generally, if a door width exceeds 140% of its height, the unit will be top hinged. Side hinged doors typically hinge left with a right hinge configuration optional.

For top hinged doors, there are two types of support mechanisms: Prop-Rods or Gas Cylinder "Assists".

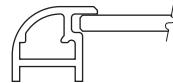
Smaller top hinged doors, weighing less than 30 lbs., are supported open approximately 60 degrees using "Prop-Rods". Rods are mechanically secured to directory cabinet and fold neatly behind all door shapes.

Gas Cylinder "Assists" are incorporated when top hinged doors exceed 30 lbs..

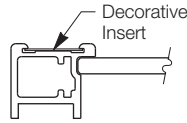
CAUTION: When specifying directory size, be mindful that a large unit will result in a heavy door. Stress will transfer to the mounting surface due to increased operating loads. Therefore, it is imperative that the surface be reinforced as necessary for function and safety. Consult APCO for any questions regarding mounting surface suitability.



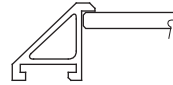
Square Door (SD)



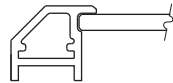
Radius Door (RD)



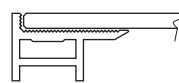
AccentTrack™ (AT)



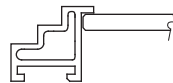
AngleEdge™ (AE)



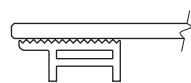
Bevel Door (BD)



Suspended Glass Door (SG)



TriStep™ (TS)



Floating Glass (FG)
Available Only with Full-Recessed Modules 2210.2 & 2240.1

Finishes

The following finishes are standard for extruded aluminum Door profiles:
Natural Satin Anodized
313 Dark Bronze Anodized
315 Black Anodized

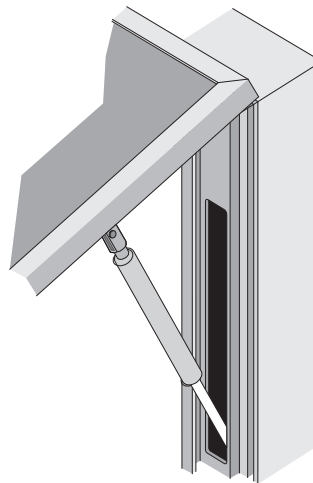
Optional Door finishes include:

- Aluminum
 - Polished, Uncoated (APU)
 - Satin (Brushed), Clear Coated (ASC)
- Brass (Yellow)
 - Polished, Uncoated (BPU)
 - Polished, Clear Coated (BPC)
 - Satin (Brushed), Clear Coated (BSC)
 - Chrome Plated (BCHR)
 - Patina (Antique), Clear Coated (BAC)**
- Brass (Red)
 - Polished, Uncoated (RBPU)*
 - Polished, Clear Coated (RBPC)*
 - Satin (Brushed), Clear Coated (RBSC)*

Acrylic Lacquer is used for Clear Coated finishes
* Matched to 90/10 Commercial Bronze
** Oxidized Bronze (Supply Sample for Accurate Match)

Polyurethane paint is another optional finish. Standard colors are available or custom colors can be matched.

Gas Cylinder "Assists"



Glazing

Standard glazing is 1/4" thick, tempered safety glass with Greylite #14 tint. Tempered glass provides a maximum combination of strength, durability and safety. The dark-blue/black Greylite #14 tint allows even graphics illumination while concealing the directory's inner workings.

IMPORTANT: Edges of tempered glass are vulnerable to breakage. All Visulite door frames trap these edges, with the exception of Floating Glass, which is limited to full recessed applications where the edges of the glass are protected by the surrounding reveal trim.

Composites (i.e. acrylic, lexan, etc.) are not recommended for use as glazing in Visulite door frames as these materials are vulnerable to scratches, their expansion properties add to surfaces that are already uneven and wavy, and none is as strong as tempered glass.

Door Shape	Aluminum				Brass (Yellow)				Brass (Red)				Polyurethane Coated	
	Nat.Sat.	313	315	APU	ASC	BPU	BPC	BSC	BCHR	BAC	RBPU	RBPC		RBSC
Square Door (SD)	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Radius Door (RD)	•	•	•	•	•	n/a	n/a	n/a	n/a	•	•	•	•	•
Bevel Door (BD)	•	•	•	•	•	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	•
Suspended Glass Door (SG)	•	•	•	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	•
AccentTrack™ (AT)	•	•	•	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	•
AngleEdge™ (AE)	•	•	•	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	•
TriStep™ (TS)	•	•	•	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	•
Floating Glass (FG)	n/a	n/a	•	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Don't be fooled by imitation chrome plated metal. Solid brass provides the highest quality and longest lasting chrome plated surface. Aluminum doors with glass, weigh approximately 3-1/2 lbs. per square foot. Brass doors, weigh approximately 5-1/4 lbs. per square foot.

Semi-Recessed Reveals

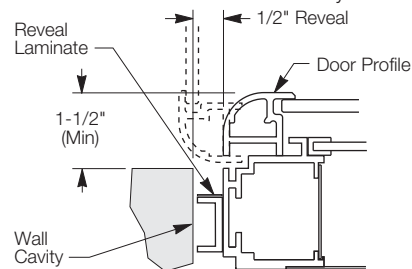
Semi-Recessed and Full Recessed directories are equipped with non-structural, outer perimeter reveals, mechanically fastened to the cabinet.

In a Semi-Recessed application, the cabinet mounts into a finished opening with minimal installation clearance. A 1/2" wide decorative reveal is used to offset the dimensional variance between the directory's housing and the wall cavity. For the door to operate properly, the directory protrudes a minimum 1-1/2" from the surrounding wall surface.

Semi-Recessed Directory



Reveal - Semi-Recessed Directory



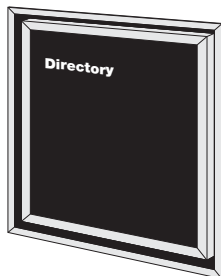
Full Recessed Reveals

In a Full Recessed application, a minimum 1" wide by 1-1/2" deep reveal is added for proper door operation. This space is continuous around the cabinet perimeter for a uniform appearance.

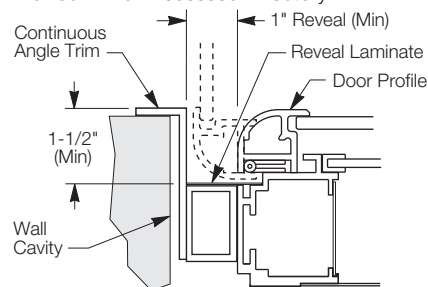
Continuous Angle Trim is provided as a standard and is attached to the reveal's outer surfaces. The trim conceals cavity variances (i.e. rough edges, out-of-square cavities, etc.) reducing the need to finish the cavity opening and returns.

Flat Bar Trim can be used to replace the Continuous Angle if desired, or the trim can be eliminated all together. It will be important, however, that the 1" perimeter reveal be maintained and the cavity size be specified accordingly.

Full Recessed Directory

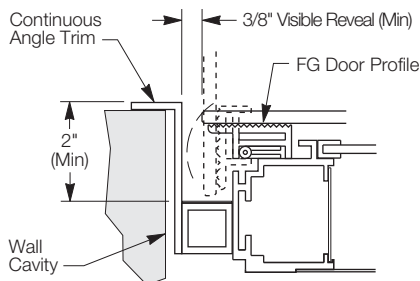


Reveal - Full Recessed Directory



Reveal - Floating Glass Door

"FG" Floating Glass



Finishes

The following finishes are standard for reveal cladding and decorative trim:

- Natural Satin Anodized
- 313 Dark Bronze Anodized
- 315 Black Anodized

Optional Reveal and Trim finishes include:

- Aluminum
 - Polished, Uncoated (APU)
 - Satin (Brushed), Clear Coated (ASC)
- Brass (Yellow)
 - Polished, Uncoated (BPU)
 - Polished, Clear Coated (BPC)
 - Satin (Brushed), Clear Coated (BSC)
 - Chrome Plated (BCHR)
 - Patina (Antique), Clear Coated (BAC)**
- Brass (Red)
 - Polished, Uncoated (RBP)*
 - Polished, Clear Coated (RBPC)*
 - Satin (Brushed), Clear Coated (RBSC)*

Acrylic Lacquer is used for Clear Coated finishes

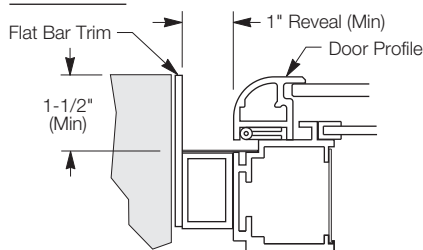
* Matched to 90/10 Commercial Bronze

** Oxidized Bronze (Supply Sample for Accurate Match)

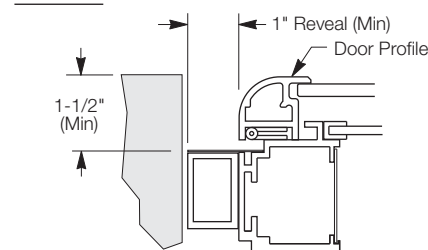
Polyurethane paint is another optional finish. Standard colors are available or custom colors can be matched.

Optional Trim - Full Recessed Directories

Flat Bar Trim



"No Trim"



Door Locks

Select from three types of door locking devices. The chart at the bottom of the page shows which locks are applicable for each Visulite mounting configuration.

Dual Lock

All doors are secured with 3M's aggressive Dual Lock Fastener located in various places between the door profile and cabinet housing.

APCO Concealed Lock

For a more secure approach, APCO offers a Concealed Lock. Hidden behind the door frame, it is only accessible to those familiar with the feature. A special Concealed Lock Key is used to unlatch the lock. Once the door is open, the latch automatically re-engages upon closing. Security is greatly improved without visible hardware.

In Semi-Recessed applications, the only "keyed" locking mechanism is the APCO Concealed Lock. This is due to the directory's narrow reveal and recessed cabinet.

Concealed Locks are directional and operate as follows;

- Top hinged doors: Lock slides right to open
- Left hinged doors: Lock slides up to open
- Right hinged doors: Lock slides down to open

The APCO Concealed Lock is easily replaceable due to its unique design. A retrofit kit is available for installing this mechanism into virtually any existing Visulite product.

Plunger Lock

In addition to the standard (3M) Dual Lock Fastener, some models can be equipped with conventional exposed keyed locks.

Optional Conventional keyed Plunger Locks are offered on Surface Mounted, Pedestal and Post Mounted modules only. As a standard, each lock is keyed alike.

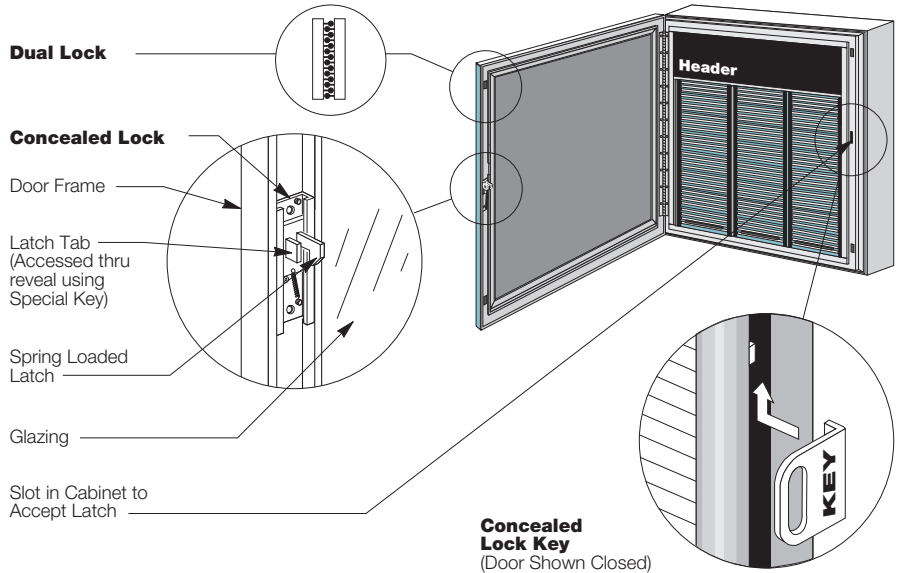
Directories mounted at angles (ie. Pedestal and Console units) with a Gas Cylinder "Assisted" door will require mechanical lock(s) to assure door remains closed. Units under 48" in width will be equipped with one lock. Those exceeding 48" will contain two locks.

All "keyed" locks are installed during directory fabrication. Should a Plunger Lock fail, it can be replaced in the field.

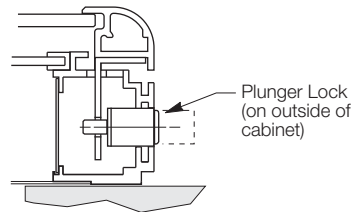
Cam Lock

The only conventional keyed lock available for Full Recessed directories is the Cam Lock. This includes all door shapes except Floating Glass.

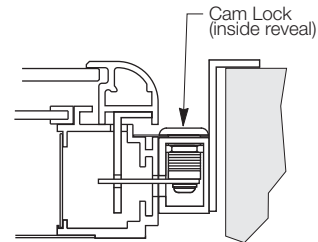
Should a Cam Lock fail, replacement will require a Full Recessed directory be removed from its installed location.



Plunger Lock Surface Mounted Directory



Cam Lock Full Recessed Directory

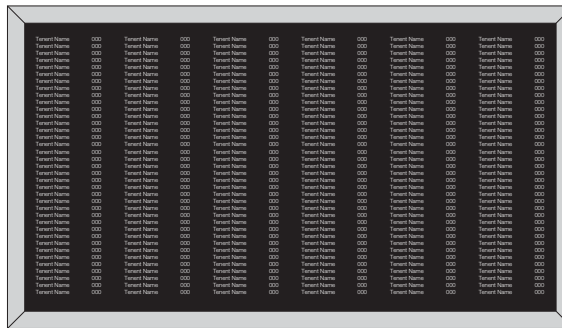


Mounting Configuration	(3M) Dual Lock	APCO Concealed Lock	Keyed Locks	
			Plunger Lock	Cam Lock
Semi-Recessed	•	•	n/a	n/a
Full Recessed	•	•	n/a	•
Surface Mount	•	•	•	•
Pylon	•	•	•	n/a
Console Mount	•	•	n/a	•
Pedestal Mount	•	•	•	•
Floating Glass	•	n/a	n/a	n/a

Header & Strips
Configuration A



Strips Only
Configuration B



Full Size
Configuration C



Custom
Configuration D



Header Panel & Message Cartridge

Header Panel

The header cartridge consists of a film negative graphic insert between a clear acrylic face and translucent white acrylic backer. Components are "sandwiched" together with removable rubber gasket extrusions around the perimeter. Standard header height is 4" (including gasket). Viewable image area is obtained by subtracting 1/2" from overall header height and width.

Message Strip Cartridge

Message strip cartridges are assemblies consisting of pre-engineered and patented*, injection molded plastic carriers (windows) which are permanently attached to translucent white acrylic. Cartridge width is fixed and cannot be changed or altered.

The same rubber gasket extrusion, provided with the header, is used to capture the cartridge's vertical edges. The gasket is finger-adjusted to prevent unwanted light leaks and also provides expansion due to natural heat buildup within the directory.

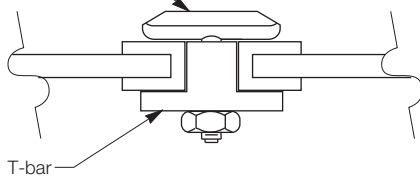
Message Strip Cartridges are only available in two widths. The NS-50 (1/2") strip cartridge assembly is 7-5/16" wide and contains 1/2" high x 7" wide film negative message strips which stack in 5/8" increments.

The NS-100 (1") strip cartridge assembly is 11-17/32" wide and contains 1" high x 11" wide film negative message strips which stack in 1-5/32" increments.

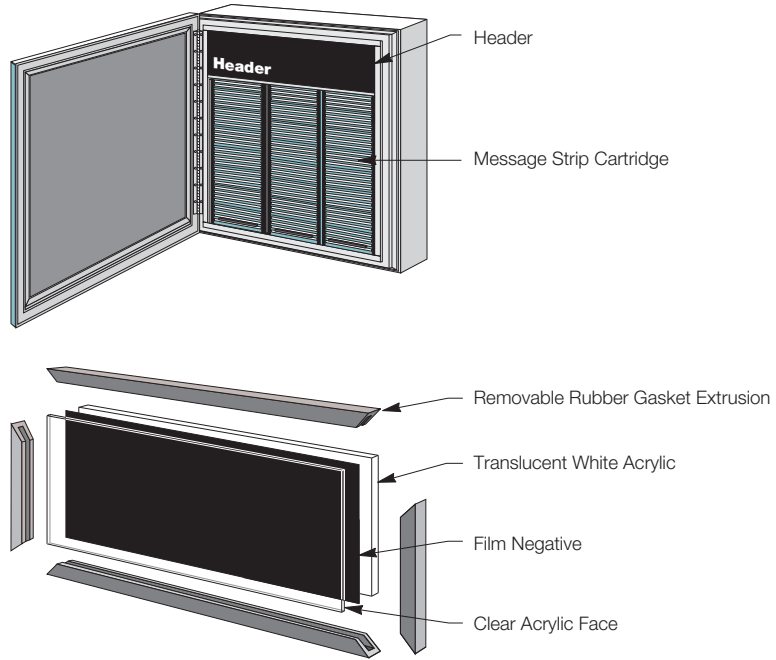
Header panel and message strip cartridges are supported within a gridwork of aluminum T-bars and are retained with molded plastic "turn clips" for easy servicing.

Plastic Turn Clip

Turn Clip Rotates For Graphic Insert and Removal



Header Panel



Standard Header Size



Header Graphic Formats



Left Center Format

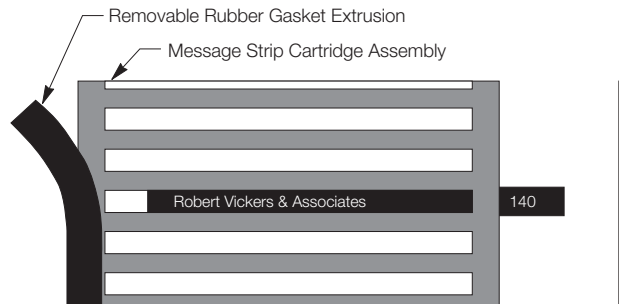


Right Center Format



Center/Center Format

Message Strip Cartridge



* Patent No. 4,653,209

Film negative message strips are available in two (2) sizes to fit APCO's patented Message Strip Cartridges. Message strip carriers are injection molded plastic. Therefore, their width cannot be changed or altered.

The 1/2" x 7" size of the NS-50 and the 1" x 11" size of the NS-100 message strips refer to film negative cut sizes.

Strips are custom imprinted in a broad range of typestyles. Recommended copy sizes are as follows:

NS-50 - Type Sizes / Copy Area

(Inc) Initial caps type size: 3/16"
 (UC) Uppercase ONLY type size: 1/4"
 Maximum illuminated copy length: 5 3/4"
 Visible illuminated window: 3/8" x 6-1/4".

NS-100 - Type Sizes / Copy Area

(Inc) Initial caps type size: 3/8"
 (UC) Uppercase ONLY type size: 1/2"
 Maximum illuminated copy length: 9 5/8"
 Visible illuminated window: 3/4" x 10-1/8".

Colored Message Strips

Translucent Color Gels can be inserted into the cartridge window along with the message strip to add color to the image. Message strips are easily inserted during directory fabrication or later by the User.

Optional Message Strip Sizes

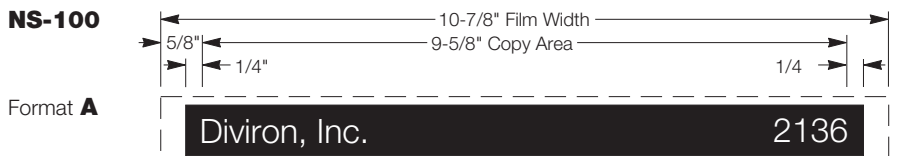
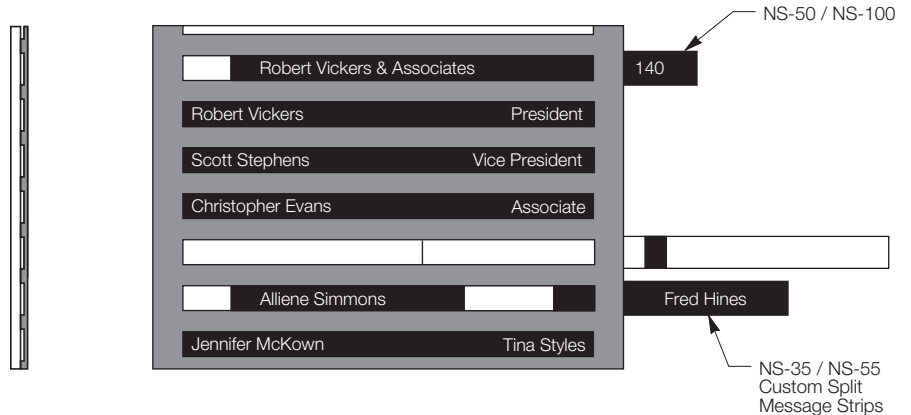
An NS-35 (1/2" x 3-1/2") film negative message strip is available and fits into an NS-50 message strip cartridge, virtually doubling message strip capacity. Copy height is limited to 13 point (1/8") with a maximum 21 to 24 characters, depending on typestyle.

An NS-55 (1" x 5-1/2") film negative message strip is available and fits into an NS-100 message strip cartridge, virtually doubling its message strip capacity.

Prepaid Reorder System

Replacement film negative message strips are available through the Prepaid Reorder System. A laminated order form with complete specifications is provided along with serially numbered stickers, in quantities of 10, 25 or 50, which can later be redeemed by fax or email.

Message Strip Carrier - Patent No. 4,653,209



Graphic Panels

Changeable Graphic Panels hold film negatives or transparencies of virtually any size. Their cartridge construction contains a film negative or transparency, sandwiched between a clear acrylic face and a translucent white acrylic backer. Oftentimes, message strip cartridges are substituted for Graphic Panels and used for advertising until a building is completely leased and full strip capacity is needed.

Maps and Plans are common forms of sheet graphics. Artwork can be provided electronically or APCO can create the art from architectural site or floor plans.

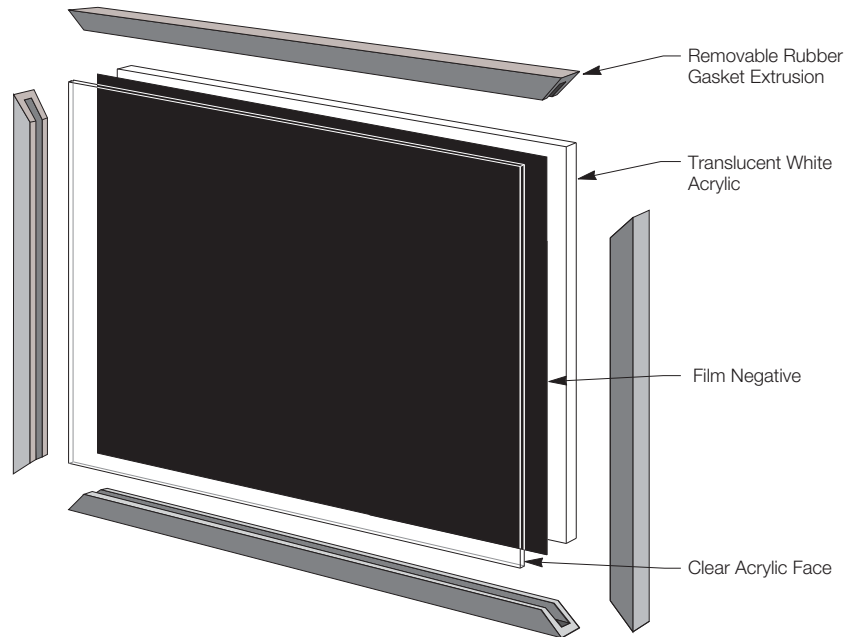
Custom Configurations

Visulite can display a combination of header(s), map(s), photo transparencies and film negative message strips. It is imperative however that these components be sized and located so their supporting T-bar gridwork provides adequate clearance for servicing the fluorescent lamps within the cabinet. Consult factory for details.

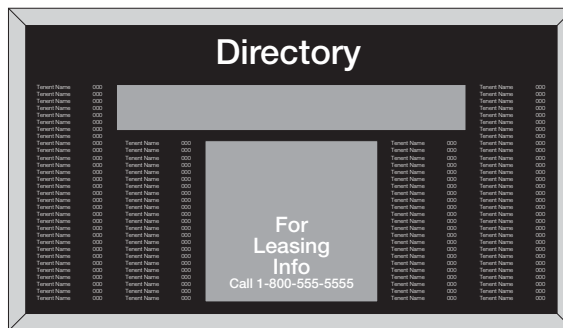
Etched Glazing

Messages or logos can be factory sandblasted directly into the glass face. Consult factory for details.

Graphic Panel Construction



Custom Display Configuration



Electrical Supply

Visulite directories can be factory-wired 120V/60Hz, with 277V/60Hz available for most. Appropriate voltage is determined by the electrical service available at the install location within a facility.

A three conductor pigtail is provided, extending from the backside of the cabinet. A licensed electrician provides electrical supply, conduit and associated fittings for "hard-wiring" the directory on site.



Visulites are manufactured to meet strict U.L. (Underwriters Laboratories) requirements. The UL label is placed inside along with a list of all electrical component replacement information.

An internal, raceway mounted disconnect switch controls UL required, Class "P" ballast(s). This ballast type is internally protected by a device that will automatically disconnect power in the event of overheating. **IMPORTANT:** Whenever replacement is required, the new ballast(s) must meet the exact specifications of the original ballast(s).

Visulite's internal light source is generated by medium bi-pin, cool white fluorescent lamps. Each is placed vertically to facilitate servicing and yield consistent lighting. **NOTE:** To maintain even illumination, it is recommended that all lamps be replaced when any single lamp needs servicing.

Amperage

All Visulite directories operate using less than 5 amps. Exact amperage is available upon request.

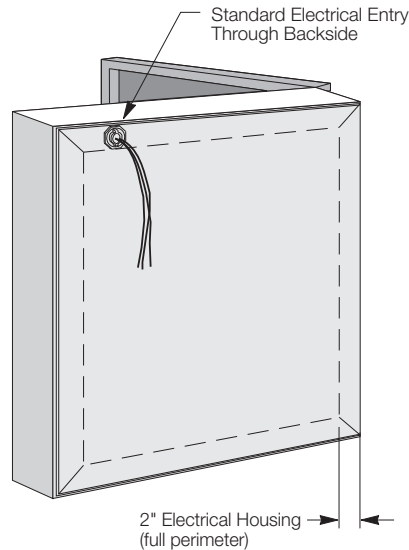
Electrical Options

Directories can be wired for non-standard voltages.

Electrical power can enter the directory cabinet from virtually any location. However, it is important to avoid interfering with anchor locations and surrounding reveals. Therefore, it is recommended that entry be directed into cabinet's electrical raceway at location illustrated on shop drawings.

Custom Installation

Custom mounting sometimes necessitates adding internal or external structure. If custom shop drawings are requested, they will reflect all changes to a standard directory and any alterations necessary to a facilitate installation.



Unique Conditions

Selecting from standard sized cabinets provides the greatest percentage of usable illuminated area. However, when the specifier desires (or requires) a non-standard sized unit, there are unique conditions which need to be addressed prior to determining directory specifications.

New Conditions

Including directories in building construction documents is highly recommended. This specifies the surface(s) where the directories will be mounted, allows wall cavities to be sized to fit specific cabinets, includes structural support elements and denotes power supply requirements.

Existing Conditions

Often, existing or unique architectural conditions determine directory specifications. For instance, a wall may be unrestricted with ample space for a large or small display. However, the electrical supply may have already been provided to connect at the center. As this is not a Visulite's standard location for electrical access, the custom connection should be included in the specifications so that expensive field-rewiring can be avoided.

Another example is the desire for a large capacity directory which may be limited to a small mounting surface area. In this case, APCO can help to determine the largest, most fully functional unit or offer possible options.

Sizing Directory to Cavity Opening

Because each is hand crafted, Visulite can be sized to fit virtually any existing cavity. Opening dimensions must be measured accurately. Inaccurate readings will result in a product that does not fit well within the wall cavity.

In an existing condition, measure the opening's height, width and depth. Assure the opening is square constructed by measuring diagonally from corner to corner. These two dimensions should be identical. The cavity depth confirms whether or not the mounting method is achievable. There must be adequate support structure and ample space for electrical connections. (See separate Shop Drawings for recommendations)

IMPORTANT: If wall cavity opening does not contain adequate blocking to support the directory, additional structure must be added.

Lamp Placement

To achieve maximum illumination, lamps must fit evenly between cabinet members. Standard directory heights are derived from standard fluorescent lamp lengths and will illuminate the entire area between the 2 inch thick cabinet members. (FIG.1)

When directory height is custom and lamps do not fit evenly between the top and bottom cabinet members, electrical raceway covers can often be formed for proper lamp holder spacing. Identifying the maximum lamp length will determine the available illuminated area.

A non-standard cabinet height may require "off-setting" the electrical raceway cover(s) to accommodate a shorter lamp. This will create a non-illuminated area in the directory, equivalent to the size of the "off-set(s)". This area is referred to as "Black-out". The "Black-out" can be located at the bottom (FIG.2), the top (FIG.3) or divided between top and bottom (FIG.4). It is recommended that graphic layout be determined prior to specifying "off-set" location(s).

Display Components

Once cabinet height and lamp combination has been established, graphic component heights can be determined. Overall component height and location within the directory will dictate usable illuminated area.

A header is commonly the first component specified. Its height will determine the space available for message strips or other graphics. In certain conditions, the header width will also become a factor.

When a custom cabinet height is deemed necessary, APCO can determine which of many available fluorescent lamp lengths to use. If either electrical raceway cover must be off-set, APCO recommends it be the bottom raceway so that header graphics remain in an aesthetically pleasing location near the top of the display.

Consider the top raceway is off-set to fit the fluorescent lamps (FIG.3 and FIG.4). Illuminated header area will be lost unless header height is increased. By increasing header height, header graphics can be lowered into the backlit area. The newly created area above however, will result in additional black-out at the top of the display.

In extreme conditions where the closest available lamp length would require off-setting the top and bottom raceways drastically, APCO has the ability to overlap lamps. Consult factory for details.

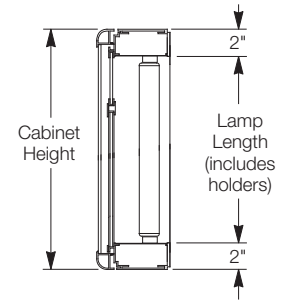


FIG. 1
Maximum Illumination

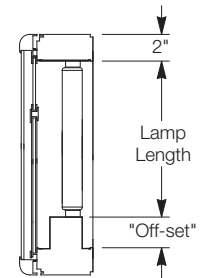


FIG. 2
Raceway "Off-set"
at Bottom

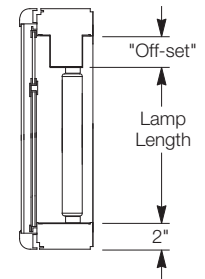


FIG. 3
Raceway "Off-set"
at Top

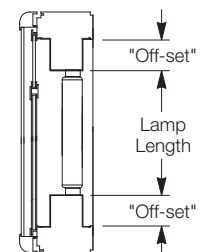


FIG. 4
Raceway "Off-set"
at Top & Bottom

Unique Conditions

Message Strip Capacity

It is important to calculate strip capacity based on illuminated area (i.e. lamp length) rather than overall directory height. Non-standard directory heights with "off-set" raceway(s) contain horizontal black-out area(s). Message strips located within the black-out area(s) are not considered usable.

The standard directory heights in this section pertain to lamps which fit evenly between cabinet crossmembers and do not require electrical raceway modifications.

Column Capacity

Directory cabinets can be constructed in widths from 10-11/16" to 95-1/4". Because lamps are assembled vertically, the cabinet will always emit its maximum illuminated width.

Standard cabinet widths are based on columns of NS-50 (1/2" x 7") or NS-100 (1" x 11") message strip cartridges. Non-standard width directories filled with the same message strips will result in vertical "black-out" area(s). Generally, the "black-out" is split equally left and right but can be oriented as desired. Dark opaque material is placed into the voids to fill the area(s) which are too small to accommodate additional cartridges. (FIG.5)

Use FIG.6 as a guide to determine how many message strip columns can fit into a non-standard width directory.

Custom Configurations

Custom configurations may include combinations of NS-50 or NS-100 message strip cartridges, header and/or graphic panels and black-out areas. Multiple graphic displays often require multiple horizontal T-bar gridwork supports. Locating these bars may become crucial when considering lamp maintenance. Removal of T-bars is not recommended. Consider combining panels when possible to avoid obstructing the space necessary for lamp removal and replacement. Consult factory for details.

When message strip cartridges are used, remember that the width of these components cannot change and must have appropriate T-bar support. Unlike strip columns, graphic panels can be constructed in virtually any width.

When graphic panels are displayed, lamps are spaced equivalent to that of the NS-50 message strip column.

Engineering Services

There are endless possibilities in which a Visulite can be configured. However, ERRORS associated with this product can be COSTLY. APCO can assist in calculating most every aspect of any Visulite product.

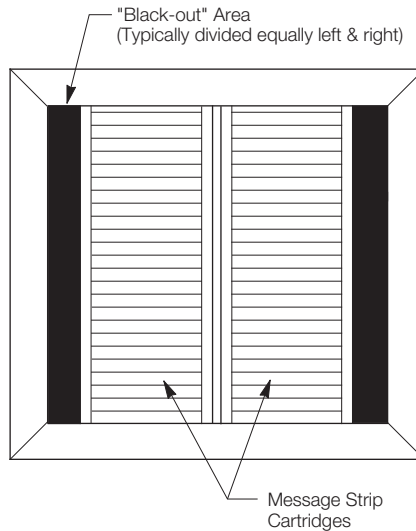


FIG. 5
Non-standard Width Directory
(Door not shown)

NOTE: Non-standard cabinet width must be 11/16" or greater than standard cabinet width. Otherwise, one column must be removed.

Example:

A non-standard 26-5/8" cabinet width is required. The next smaller standard cabinet width is 26-1/16", which houses 3 columns of NS-50 message strips.

$$\begin{array}{r} 26-5/8" \text{ (Non-standard cabinet width)} \\ - \quad 11/16" \\ \hline 25-15/16" \text{ (Next smaller standard cabinet width is 2 column 18-3/8" wide)} \end{array}$$

The result is a 26-5/8" wide cabinet with ONLY two (2) columns of NS-50 message strips and approximately 8-1/4" (26-5/8" minus 18-3/8") of vertical black-out area.

Example:

A non-standard 26-7/8" cabinet width is required. The next smaller standard cabinet width is 26-1/16", which houses 3 columns of NS-50 message strips.

$$\begin{array}{r} 26-7/8" \text{ (Non-standard cabinet width)} \\ - \quad 11/16" \\ \hline 26-3/16" \text{ (Next smaller standard cabinet width is 3 column 26-1/16" wide)} \end{array}$$

The result is a 26-7/8" wide cabinet with three (3) columns of NS-50 message strips and approximately 13/16" (26-7/8" minus 26-1/16") of vertical black-out area.

FIG. 6

Non-standard Width Directory
Column Calculation

Console & Pedestal Mount



2240.1
Console Mount

Consult Factory



2240.2
Single Pedestal Mount

Consult Factory.
Shop drawings available at www.apcosigns.com



2240.3
Double Pedestal Mount

Consult Factory.
Shop drawings available at www.apcosigns.com