



technical bulletin: **DIRECTIONAL ACCENT LIGHTING**

Gotham directional accent lighting is comprehensive in scope. The Gotham DP, DPH and DLV product families offer apertures from 1" to 8" accommodating lamp types from MR11 to PAR56. A number of important specification features are incorporated into this versatile group of accent luminaires to include:

- Full 360° lamp rotation with vertical and horizontal locking
- Post installation luminaire housing adjustment
- Locking filter option (DP, DPH & DLV 6" & 8" only)
- Hot aiming capability
- Optimized Center Beam lamp positioning
- Lamp cup with built in snoot (DLV 1" – 4" apertures only)
- Multiple filter media capability
- Contoured trim cones (DP, DPH & DLV 6" & 8" only)
- Top access
- Bar hangers standard
- Universal housing design with tool-less adjustability
- Modular socket assembly (DLV 1" – 4" apertures only)

One of the most important aspects of the Gotham directional family of accent lighting luminaires is the attention to mechanical detail. Mechanically, an accent lighting luminaire must be easy to install, easy to adjust to achieve the desired effects, and easy to maintain the lamp without changing the initial setting.

INSTALLATION

A number of features make the Gotham directional product family easy to install. All Gotham downlights come standard with mounting bars. In addition, the mounting bar mechanism allows for tool-less adjustment of the housing during the installation process, making it easy for the contractor to accurately position the plaster flange flush with the finished ceiling (Fig. 1).

The bar hanger adjustment mechanism enables the contractor to quickly span to the mounting structural supports and lock the housing location into place. With t-bar grid, the locking is accomplished by simply bending the end of the hanger bar to engage the grid. Once secured to the structure,

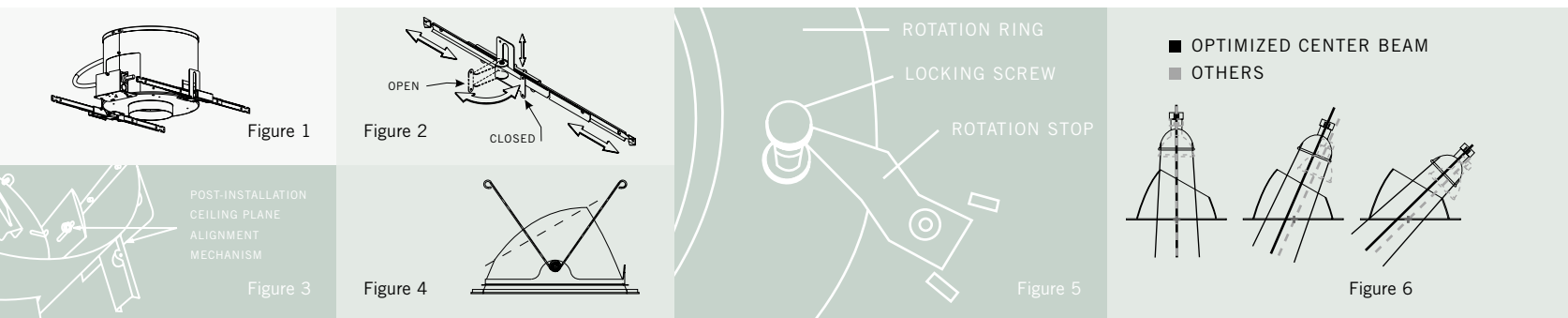
the torsion springs, inserts them into the appropriate location inside the luminaire housing and releases. The springs expand and self align to the retention mechanism (Fig. 4). Once this is done, the trim is gently pushed up tight against the ceiling surface.

ADJUSTMENT

Once the housing has been properly installed, the Gotham directional accent luminaire is ready for adjustment. A number of features have been built into the lamp adjustment system to make this task both easy and precise.

To begin, the lamp adjustment system can be rotated a full 360° so the housing orientation does not impair the lamp adjustment process. This unique design consists of a moving rotation stop that allows for the material thickness of the knurled locking fastener and pivots as the horizontal locking screw contacts it from each direction, thus enabling a full 360° of rotation (Fig. 5).

Polyester rotation bushings eliminate metal-to-metal contact



vertical alignment can be quickly accomplished by simply moving the whole housing up or down so that the bottom of the plaster flange is level with the ceiling surface (Fig. 2). Then, simply pressing the cam action lever, the vertical alignment of the housing is securely locked into place.

If by chance the contractor errs in his installation and the plaster flange is not flush with the ceiling plane, a secondary post-installation adjustment is possible. The worst-case scenario is that the ceiling is “hard” (gypsum board or plaster) so that access to the housing can only be made through the luminaire aperture. In this case, the contractor simply accesses the post adjustment mechanism from the inside of the luminaire. One screw on either side is loosened; the housing is adjusted to the correct position and the post adjustment screws reset (Fig. 3). The housing is now perfectly aligned with the ceiling plane. This feature is very important to the finished room-side appearance of the luminaire. If the plaster flange protrudes beneath the ceiling plane the finishing trim does not fit flat against the ceiling. This results in a very unsightly gap between the trim flange and the ceiling plane.

The final phase of the installation process is inserting the finishing trim into the directional accent luminaire. This task is easily accomplished as the contractor simply squeezes

between the rotation ring and the luminaire housing, thereby allowing the horizontal adjustment mechanism to glide smoothly through its full rotation.

Once the horizontal orientation of the lamp is set, its vertical adjustment can be set. The Gotham directional accent luminaires use another unique concept for positioning lamps relative to the aperture opening. This feature is called the Optimized Center Beam (OCB) positioning system. As shown in the graphic representation (Fig. 6), the Gotham directional adjustment mechanism positions the lamp to assure that maximum light exits the luminaire and is not trapped inside the housing. The OCB system works to keep the lamp face the same distance from the aperture opening regardless of its vertical position. By doing so, all of the light from the lamp is directed through the trim cone. Alternatively, keeping the center beam of the lamp in the center of the aperture would force the lamp face to move closer to the aperture, resulting in wasted light as a portion of the lamp flux would be lost behind the trim cone. The net result of Gotham’s OCB is improved luminaire efficiencies and a clean, more homogenous scallop that is unobstructed by the trim cone throughout its range of adjustment.

ADJUSTMENT CONT.

The distance of the lamp face from the aperture opening is determined by the optical characteristics of the lamp. MR16 lamps, for example, exhibit two distinct light distribution patterns. The “spot” lamp has a slightly converging and then diverging beam shape (Fig. 7) while the “flood” lamp has a very significant converging and diverging beam (Fig. 8). The net result is that the narrowest beam diameter or focal point of the MR16 lamp occurs approximately 1” from the lamp face. As such, the DLV 1” to 4” MR16 luminaires are optimized for this lamp face-to-aperture distance.

Vertical position locking is another important Gotham directional feature. The Gotham directional accent luminaire locking mechanism is offset from the vertical rotation point, thereby creating a locking function that has a much higher resistance to movement. This ensures that once locked, the vertical alignment mechanism stays in place, even after years of use.

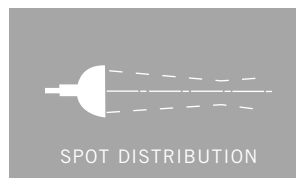


Figure 7

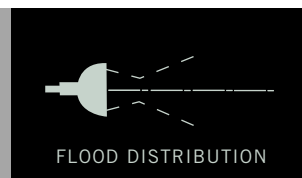
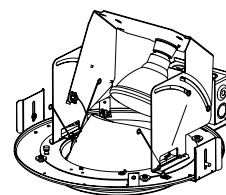


Figure 8

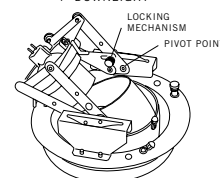
- 4", 6" & 8" DP and DPH and 6" & 8" DLV vertical adjustment mechanisms utilize the OCB positioning design. Slots located in the socket mounting plate facilitate the use of a screwdriver to assist with vertical adjustment while the lamp is energized. A wing nut fastener is used to increase the installer's grip, thereby increasing the amount of torque imparted on the locking mechanism. The reverse is also true; to loosen the locking nut, the wing nut fastener enables greater torque to be applied, thus making it easier to unfasten. The weight of the larger PAR lamps that can be used with these luminaires requires greater locking torque. All hardware visible through the luminaire's aperture is painted matte black.

- 4" DLV mechanism for MR16 lamps is similar in functionality but utilizes a 4-bar “scissor” design to achieve OCB lamp positioning. “Off-access” locking with a knurled locking fastener is easily accessible and allows for secure positioning of the MR16 lamp. Again, all hardware visible through the luminaire's aperture is painted matte black.

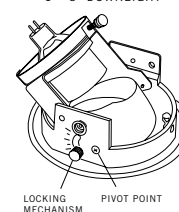
- 1" – 3" DLV mechanism for MR16 lamps also utilizes OCB lamp positioning. However, due to the UL requirement to maintain a 4" aperture opening, a die cast faceplate with optical insert is used. The OCB mechanism is built into the die cast trim housing. Lamp aiming requires that the trim be extended slightly away from the ceiling plane to access the knurled locking fastener located on the outer portion of the die cast trim housing. The entire trim housing is retained into the overall luminaire housing with torsion springs as are the 4" and greater trims for all other directional accent luminaires.



4" DOWNLIGHT



1" – 3" DOWNLIGHT



MAINTENANCE

After installation and adjustment, the true test of a quality architectural grade luminaire is how well it stands up to the rigors of day in and day out operation, including lamp maintenance. This is especially true if any beam shaping filter media has been utilized.

All luminaires within the Gotham directional accent family are fully maintainable through their apertures. All internal mechanisms can also be accessed (without tools) through the top of the luminaire housing. Access via the aperture requires removal of the finishing trim. The trim is secured to the luminaire housing by way of a retention chain thus ensuring that the trim is not accidentally dropped during the maintenance operation.

4", 6" & 8" DP and DPH and 6" & 8" DLV luminaires can be equipped with an optional locking filter holder (Fig. 9). The filter holder mechanism enables locking of the filter medium in a precise orientation. Filter holder accommodates up to two pieces of media. For example, optical and color filters can be

OTHER FEATURES

For the DP, DLV and DH 4", 6" and 8" luminaires utilizing PAR16 or larger lamps and non-directional filters, a simplified filter holder mechanism is available (Fig. 14). This mechanism attaches directly to the lamp face. Simply removing the filter holder allows for easy change of filter mediums and for lamp replacement.

The DLV lamp cup for MR16 lamp types in 1" – 4" apertures accommodates up to two filtering media (lenses, color filters or a honeycomb louver). The lamp cup assembly has a built-in snoot that shields the lamp to reduce brightness (Fig. 15). It is also effective in correcting the lamp's performance by absorbing the stray light that often occurs at the very edge of the lamp's beam, thereby minimizing high-angle brightness and glare.

Gotham DP and DPH trim cones are available in 3 top-cut angles. One for aiming angles less than 15°, one for aiming angles between 15° and 25°, and one for aiming angles between 25° and 40° (Fig. 16). The top-cut angle follows the radius of the lamp face as it moves through its vertical adjustment.

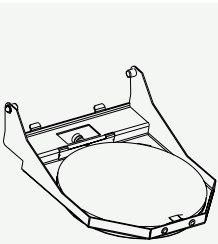


Figure 9

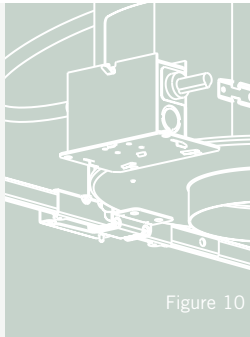


Figure 10

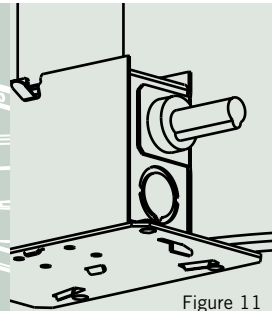


Figure 11

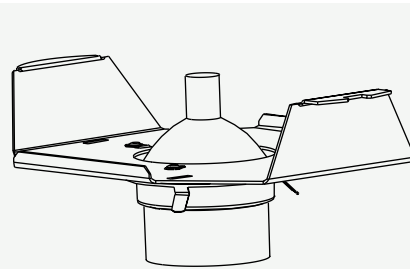


Figure 12

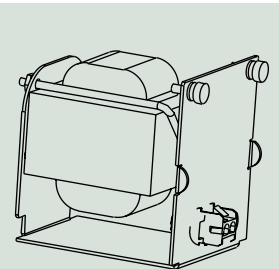


Figure 13

combined for special effects. When lamp maintenance occurs, the filter does not have to be unlocked to enable lamp replacement. Instead, the locking filter holder mechanism is easily removed (without tools), giving unobstructed access to the lamp. Once the lamp replacement is accomplished, the locking filter holder is snapped back into place without disturbing the filter medium orientation. Access to low voltage transformer or HID ballasts is accomplished via a large access door that can easily be accessed without tools from inside the luminaire housing (Fig. 10). The insulation detector is also modular and can also be easily accessed and replaced, again without the need of tools (Fig. 11).

1" – 4" DLV luminaires for MR16 lamps utilize a lamp socket cup. The socket cup retains the low voltage lamp and up to two filtering mediums. Lamp maintenance is accomplished first by removing the finishing trim and then removing the lamp cup from the adjustment mechanism (Fig. 12). The lamp socket and power supply wiring is long enough to allow the lamp cup and lamp to extend below the finished ceiling. At this point the lamp is easily removed, replaced and then reinserted into the lamp cup. Finally, the lamp cup with the new lamp is snapped back into the adjustment mechanism. The lamp position is not affected by this procedure. The lamp socket and power supply wiring is also modular and can be easily replaced. Additionally, the low voltage transformer (Fig. 13) and insulation detector (Fig. 11) are also modular assemblies and easily accessed via the DLV luminaire aperture.

This reduces visibility into the luminaire through the aperture but maintains maximum aperture opening to the lamp face.

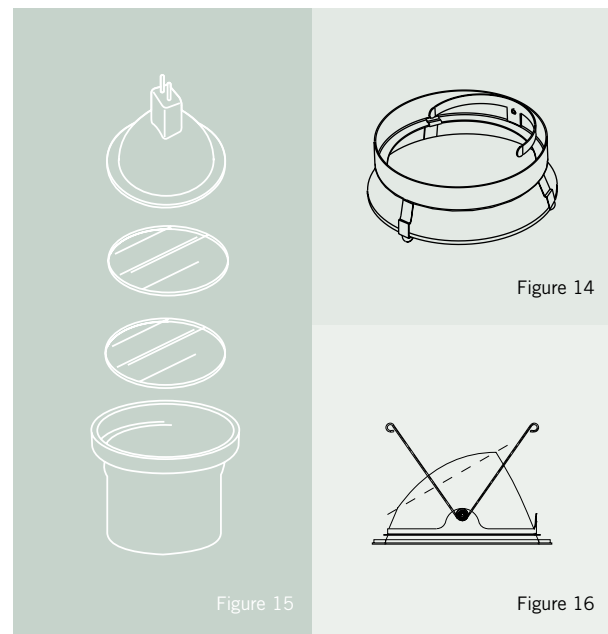


Figure 14



Figure 15

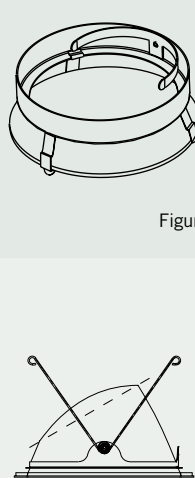


Figure 16

LENS

Gotham directional accent luminaires are available with many different filtering mediums as optional accessories. These filters are offered in both borosilicate glass and heat-tempered soda lime glass.

Borosilicate

- Glass made with boric oxide
- Also known as Pyrex®
- Suitable for temperatures up to 900°F (482°C)

Soda Lime

- Silica-based plate or window glass
- Heat-strengthened or tempered
- Suitable for temperatures up to 600°F (316°C)

BEAM-SHAPING LENSES

A number of optional beam-shaping lenses are available with the Gotham directional accent luminaires. The different lenses change or affect the lamp beam distribution differently:

- **Softening Lens (SFG)** Borosilicate glass, 1/8" thickness, Average Transmission (90%). Slight linen texture, effectively diffuses the lamp beam. Eliminates striations and minimizes the visible differences between lamp manufacturer's performance. Standard with all DLV family MR and ALR lamped luminaires.
- **Light Frost Lens (LTF)** Borosilicate glass, 1/8" thickness, Average Transmission (90%). Frosted surface, slightly diffuses the lamp beam and creates a slightly wider beam of light.
- **Perimeter Frost (PMF)** Borosilicate glass, 1/8" thickness, Average Transmission (90%). Frosted surface on the outer edge of lens with clear center. Diffuses and cleans up the outer edge of the lamp beam while maintaining a concise center beam.
- **Spread Lens (SL)** Soda Lime glass, 5/32" thickness, Average Transmission (91%). Spreads and significantly widens and softens beam distribution in all directions.
- **Elongating Lens (EG)** Soda Lime glass, 5/32" thickness, Average Transmission (85%). Elongates or lengthens the beam distribution in one direction, creates a rectangular beam distribution.
- **Clear Lens (CL)** Borosilicate glass, 1/8" thickness, Average Transmission (90%). A clear lens provides no additional performance benefits to lamp distribution.

FILTERS

The Gotham directional family of accent luminaires also offers a wide variety of filters, including dichroic color filters, a dichroic UV filter and soda lime color filters. The entire directional family can accommodate up to two media. Each filter can be used with a beam-shaping lens so that both the distribution and transmission characteristics of the lamp's beam can be altered to provide a limitless number of effects.

DICHROIC

Gotham offers 11 different dichroic color filters as well as a museum-quality UV filter. The dichroic lenses are borosilicate glass (suitable for temperatures up to 900°F) with film appliqué that will only transmit certain wavelengths of light. The advantage of these filters is their durability, high transmission, longevity and selection of colors, including some unusual colors. Most notable of the borosilicate filters are the following:

- **UV Filter (UV) Bausch & Lomb's Optivex®**, Borosilicate glass, 1/8" thickness, Average transmission (exceeds 85%). Average UV blocking exceeds 99% for all radiation below 400nm. Reduces photochemical degradation in textiles, watercolors, historical documents or other sensitive display items.
- **Cool Blue Filter (CBL LIE)** Borosilicate glass, 1/8" thickness. Boosts color temperature from 2900°K to 4250°K. The result is a whiter light similar to fluorescent and HID sources.
- **Cool Peach Filter (CPCH)** Borosilicate glass, 1/8" thickness. Lowers color temperature from 2900°K to 2700°K. The decrease in color temperature warms the quartz halogen light to appear similar to regular incandescent light.

SODA LIME

Gotham also offers soda lime color filters available in six basic colors. Soda lime filters are made of a tempered glass and are rated for temperatures up to 600°F. Note that soda lime filters tend to be less durable as the dichroic filters and their color may fade over time.

gotham®

GOTHAM ARCHITECTURAL DOWNLIGHTING
1400 Lester Road Conyers, Georgia 30012
P 800 315 4982 F 770 860 3129
www.gothamlighting.com
An **Acuity** Brands Company