

A close-up photograph of several rectangular wooden planks arranged in a staggered pattern. The planks are a warm, golden-brown color and have a smooth, polished finish. Numerous small, clear water droplets are scattered across the surface of the planks, particularly on the one in the foreground. The planks are resting on a dark, possibly black, base. The lighting is soft and even, highlighting the texture of the wood and the clarity of the water droplets.

BEGA

BEGA

Care & Maintenance Guide

Contents

Guide Overview	03
Powder Coat Paint Finishes	04
Stainless Steel	05
Copper	06
Bronze	07
Glass and RTV Silicon	08
Synthetic Materials	09
Wood	10
High Pressure Laminate	11
High Performance Concrete	12
LED / Driver Replacement Best Practices	13
Appendix A: Cleaners used at the BEGA Factory	14



Guide Overview

This guide provides detailed information on caring for and maintaining the various materials used in the BEGA portfolio of lighting and furniture. It includes instructions on how to clean each material type and provides a recommended cleaning schedule. Please read this guide before servicing or maintaining any BEGA equipment.

Guide Disclaimers:

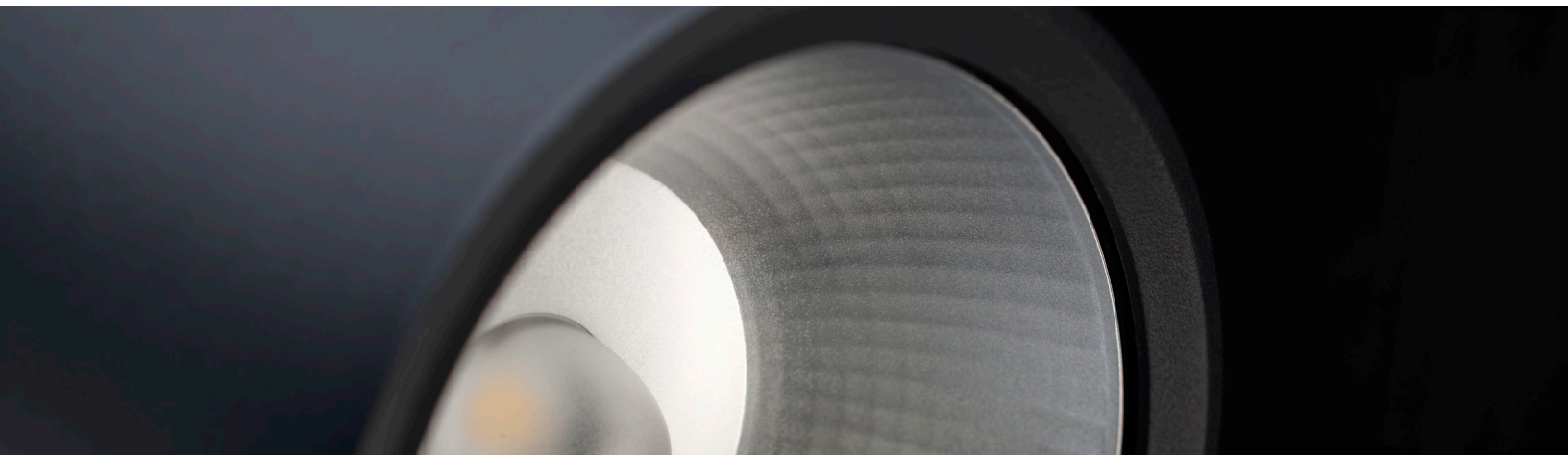
- Read this document before servicing or maintaining any BEGA equipment.
- Follow all applicable codes and ordinances.
- To reduce the risk of death, injury, or property damage from fire, electric shock, cuts, abrasions, falling parts, and other hazards:
Service of the equipment must be performed by qualified service personnel. Installation and maintenance must be performed by a person familiar with the construction and operation of all product and any hazards involved. Always de-energize the circuit and/or equipment before servicing the electrical component (as applicable).
- Wear personal grounding equipment when servicing LED luminaires to prevent electrostatic discharge.
- Do not disassemble wet location listed fixtures, except for servicing LEDs and drivers.
- Please contact our factory or your local BEGA representative:
 - If some components of the luminaires are not serviceable.
 - If you have a situation that requires breaking factory seals or requires factory service.
 - If your situation is not covered in these instructions as not all service and maintenance situations are outlined.
 - If you do not understand these instructions.
 - If additional information is required.

Updated 02/2024

Contact Information:

BEGA North America: 805-684-0533 or info@bega-us.com

Local BEGA Representative: Visit <https://www.bega-us.com/representatives>



Powder Coat Paint Finish

BEGA utilizes aluminum and steel combined with a powder coat finish for much of our portfolio. All BEGA standard finishes are matte, textured powder coat with minimum 3 mil thickness. BEGA Unidure® finish, a fluoropolymer technology, provides superior fade protection in Black, Bronze, and Silver. BEGA standard White is a super durable polyester powder. Optionally available RAL and custom color finishes are provided in either polyester powder or liquid paint.

The A360 aluminum alloy traditionally used in the manufacturing of architectural solutions is listed as 0.6% copper content (maximum allowable). BEGA will procure aluminum that comes in under 0.3% copper content to ensure longevity and quality. Steel components are procured at BEGA to ensure longevity, durability, and recyclability. Metal components will begin to oxidize the moment they come out of the mold and are exposed to air and humidity. To protect the material, we utilize a fluoropolymer or super durable polyester powder coat to maximize durability and fade protection.

Cleaning and Maintenance:

Should cleaning be required, use a soft rag/cloth dampened with water to remove any contaminants or particulates from the surface of the material. The removal of greasy, oily, or sooty substances can take place with the use of white spirit free of aromatic compounds or isopropyl alcohol. Mild cleaning solutions can be utilized though are not required if maintenance is needed.

1. Use a soft cloth or sponge with mild, solvent-free cleaner.
2. For general cleaning, dilute solvent-free cleaner with cold water.
3. For set-in stains, dilute solvent-free cleaner with warm water.
4. Wipe by applying gentle pressure in a circular motion.
5. Rinse with a clean, damp cloth afterward to remove any leftover cleaner.

Avoid using commercial descalers, solvents, or high-pressure cleaners, as they can damage the powder coatings. Once the finish has become damaged, it is much more vulnerable to fading, staining, and the removal of finish layers from the surface.

Recommended Cleaning Schedule:

Normal environment: Once every 12 months
Highly corrosive environment: Once every 6 months

Damage Repair:

For minor surface scratches on powder coat finishes, a touch-up paint kit can be purchased from your local BEGA representative (<https://www.bega-us.com/representatives>).

The kit consists of a 4.5oz aerosol can and a 0.6oz wet paint that can be applied with a brush.

BEGA Part Number: TOUCHUP-KIT-XXX

Stainless Steel

BEGA prioritizes the use of 316 grade stainless steel due to its greater resistance to chlorides – which is the main culprit in commercial stainless steel corrosion. Examples: road salts, industrial cleaners, etc. All stainless-steel BEGA housings are treated via a passivation process (acid bath) to remove contaminants at the time of component creation. A clear lanolin coating is applied post passivation to further protect the material against corrosive elements.

Stainless steel needs to be cleaned for aesthetic considerations and to preserve corrosion resistance. Stainless steel is protected from corrosion by a thin layer of chromium oxide. Oxygen from the atmosphere combines with the chromium in stainless steel to form a durable (passive) film that protects from further corrosion. Any contamination of the surface by dirt, pollution, or other material hinders the passivation process and traps corrosive agents, reducing corrosion protection. So, some form of routine cleaning is necessary to preserve the appearance and integrity of the surface.

Cleaning and Maintenance:

Should cleaning be required, use a rag/cloth dampened with water to remove any contaminants/particulates from the surface of the material. Mild cleaning solutions can be utilized if maintenance is needed. Stainless steel cleaning solutions can be utilized should any form of oxidization occur.

Clean stainless steel with a solution of warm water and gentle detergent of stainless steel cleaner.

1. Apply cleaning solution with sponge or soft cloth.
2. If discoloration persists, any commercial stainless steel polisher can be used to remove stains.
3. Follow instructions of the specific polisher and always test on a small area to ensure that there is no damage to the stainless steel finish.
4. Avoid using scouring pads or bristle brushes that may damage the finish.
5. Follow every cleaning with a rinse of hot water and wipe away any spots using a dry towel.
6. Always wipe stainless steel in the direction parallel with the brush lines, if any.

Recommended Cleaning Schedule:

Normal environment: Once every 12 months

Highly corrosive environment: Once every 6 months

Damage Repair:

To prevent oxidation and corrosion in marine or coastal environments, an annual application of a corrosion protection film is recommended. This lanolin film can be purchased from BEGA. For more corrosion prone locations, BEGA recommends an annual application of our corrosion protection film.

For an 8 oz canister, please order BEGA part number 95420 from your local BEGA representative (<https://www.bega-us.com/representatives>).

Wipe down the stainless-steel surface with a damp rag/cloth to remove surface contaminants. Dip unused cloth into the lanolin film, then apply to the surface. Once cured, the lanolin film will appear clear.

Copper

BEGA utilizes copper as a housing material for our BOOM Collection of outdoor luminaires. The copper parts are delivered with the metal's natural surface color, which develops a characteristic patina over time due to exposure to atmospheric elements. A patina is a coating of various chemical compounds such as oxides, carbonates, sulfides, or sulfates formed on the surface during exposure to atmospheric elements (oxygen, rain, acid rain, carbon dioxide, sulfur-bearing compounds). One example of a certain form of patina is the Statue of Liberty in New York.

To avoid fingerprints on the copper, use protective gloves when handling copper luminaires.

Cleaning and Maintenance:

Should cleaning be required, remember that BOOM luminaires utilize pieces of unlacquered copper. There are several methods that can be used to clean unlacquered copper:

1. Lemon juice and baking soda:

- a. This method works best for badly tarnished copper. Tarnish is a layer of corrosion that occurs when metals—including copper, silver, and brass—are exposed to oxygen, water, and air over time.
- b. A simple homemade copper cleaner can be made by combining lemon juice with baking soda and stirring until mixed completely. Once mixed, apply to the copper surface and buff in a circular motion using a soft and clean cloth.
- c. Rinse and dry.

2. Ketchup:

- a. For one of the simplest DIY cleaning techniques, apply a layer of ketchup to a copper pan or copper sink, and rub the condiment all over the surface. The tomatoes in ketchup contain an acid that helps remove tarnish.
- b. Rinse and dry.

3. Lemon and table salt:

- a. A superb way to polish copper is to cut a lemon in half and apply table salt to the pulp. This creates a natural abrasive sponge.
- b. Rub the lemon on the patina surface of the copper. Use salt as needed to remove stubborn tarnish.
- c. Rinse and dry.

4. White vinegar and table salt:

- a. The combination of white vinegar and table salt is another option for making a reliable copper cleaner.
- b. Create a paste using white vinegar and salt.
- c. Apply to the surface, and buff using a soft cloth. If dirt collects in any dents, use a toothbrush to gently scrub the grime away.
- d. Rinse and dry.

Recommended Cleaning Schedule:

Clean as needed, based on the user's discretion.

Bronze

BEGA utilizes bronze as a housing material for our BOOM Collection of outdoor luminaires. Bronze develops a natural patina over time, resulting in a unique and visually appealing aesthetic.

Bronze is a metal alloy that primarily contains copper and tin. When exposed to air, bronze oxidizes, which causes a patina on its outermost layer. The important thing to remember is that all bronze darkens as it ages, however proper care can slow the oxidation process.

Cleaning and Maintenance:

Never use metal polish or solvents on bronze. For bronze used indoors, dusting alone should suffice.

Using cleaners that aren't appropriate for bronze can have major consequences. Chloride—common around pools and a favorite 'cleaner' for some alloys—will cause corrosive tarnish that can pit and damage the metal. Pressure washers can also damage the patina and material.

Rinse the surface of the bronze luminaire with clean water.

1. Use a mixture of non-ionic or neutral detergent and water to clean the surface of the bronze. Follow the recommended concentration mixtures provided on the detergent bottle's label. It is never recommended to place concentrated detergent directly on the surface of the bronze, but rather, to mix the appropriate amount of detergent and water in a non-metallic bucket first.
2. Gently scrub the surface using a soft non-metallic scrub brush in a circular pattern. Rinse regularly to avoid particles settling into lower areas. Start washing and rinsing the surface from the top or upper-most part of the luminaire surface and work downward.
3. Allow the surface of the bronze luminaire to dry in the sun. Use towels to soak up water in textured areas

Recommended Cleaning Schedule:

Clean as needed, based on the user's discretion.



Glass and RTV Silicone

Glass is a prominent material used in various BEGA lighting solutions due to its hardness, durability, and color. Different types of glass, including flat glass, pressed crystal glass, and 3-ply opal glass, are utilized.

For products designed for use in commercial or high traffic areas, the use of RTV silicone to glue the glass to the casting is used. To ensure proper adhesion, BEGA has integrated plasma treatment of finished metal components as a standard process step prior to the application of RTV silicone. To prep the painted casting, we use a plasma machine with a low-pressure option, pulling a vacuum and adding energy. We then add a specific gas (like oxygen), which affects the surface of the paint by stripping a Hydrogen molecule – creating a negative OH site. This “activates” the surface for about 24 hours and does no long-term damage to the paint. The overall effect is to increase the adhesion of the RTV silicone to the paint by over 100%. At BEGA we use colored silicone to match the selected paint finish of your product.

Cleaning and Maintenance:

For interior products:

Regularly dust the glass with a microfiber cloth or duster. This is often sufficient for maintenance. If additional cleaning is required, carefully remove decorative glass from the luminaire and wash it in a sink with warm water and mild dish soap. Glass cleaner can also be used for spot cleaning.

For exterior products:

Use a rag/cloth dampened with water to remove any contaminants/particulates from the surface of the material. Glass cleaner can be used for cleaning. Regular cleaning is recommended to prevent dust and dirt buildup, which can reduce lumen output. An annual maintenance plan is advised.

Ensure the lights are turned off and the fixture has cooled if recently illuminated.

1. It is not recommended to remove the glass of an exterior fixture for cleaning.
If the interior of the fixture is compromised, contact the factory for replacement parts to maintain the NRTL wet location listing.
2. Use a soft cloth or sponge with glass cleaner or warm soapy water.
3. Wipe by applying gentle pressure in a circular motion.
4. Ensure fixture glass is completely dried to avoid water spots.
5. Damaged or defective glass must be replaced.

Recommended Cleaning Schedule:

Normal environment: Once every 6 months

High-traffic or extremely dirty environment: Once every 3 months

Damage Repair:

For damaged or cracked glass pieces, replacements can be purchased from your local BEGA representative (www.bega-us.com/representatives). If the glass has been glued in place using RTV silicone, subassemblies or factory repair can be arranged for your luminaire.

Synthetic Materials

Synthetic materials (e.g., polymers, UV-stabilized acrylic, and silicone) are used in BEGA's Home & Garden Collection, in select luminaires where a large glass piece would be hazardous, or in special optical assemblies.

The polymer housings used for our Home & Garden collection are a glass fiber, reinforced thermoplastic material. It's formed using injection molding techniques and exhibits exceptional quality characteristics including high stiffness and strength, dimensional stability, good chemical resistance, and superior surface finish. This material is generally resistant to a wide variety of organic solvents and alkalis. Fuels, oils and fats also have no effect on the polymer. Strong acids cause relatively rapid hydrolytic degradation of all polyamides; our polymer is resistant to dilute organic acids when in contact with them for a short time.

Glass substitutes, such as UV-stabilized acrylic and silicone optical components, are carefully selected for their excellent light transmission and long-term resistance to UV radiation and weather. When utilizing these materials, BEGA carefully chooses the highest quality options, which are also employed in various other industries such as aerospace, healthcare, and telecommunications.

Cleaning and Maintenance:

Regularly clean polymer luminaire housings using solvent-free cleansers. Avoid using high-pressure cleaners. Do not expose luminaires to excessive heat (300°C) or install them near heaters or fireplaces. For the cleaning of acrylic, only use a soft cotton or microfiber cloth.

Sweep your cloth over both sides of the acrylic to remove loose dust or dirt. Dust may seem innocuous, but each speck may have sharp edges that can cause scratches.

1. Apply a small amount of acrylic cleaner or dishwashing liquid and warm water solution to a separate soft cloth.
2. Gently wipe the acrylic surface until the cleaner is fully removed.
3. Avoid using scouring compounds, chemical cleaners like Windex, or solvents on acrylic.
4. In case of sticky substances, do not use any type of solvent.

Recommended Cleaning Schedule:

Normal environment: Once every 12 months

High-traffic or extremely dirty environment: Once every 6 months

Wood

Wood is used in BEGA's portfolio for certain lighting and furniture solutions. At BEGA, we have standardized on the use of laminated Scots Pine, Douglas Fir, and Accoya® due to their strength, safety, durability, and appealing aesthetic.

Wood is used in combination with finished metal at BEGA. The combination of wood and aluminum creates solutions that are timeless and long-lasting. Even under extreme climatic conditions such as constant sunlight, strong temperature fluctuations, and high humidity, the metal and wood remain highly corrosion resistant and stable. In this way, two extremely durable materials can be harmoniously combined. Like anything left outside and exposed to the elements for years on end, the appearance of wood materials will gradually shift over time. To uphold the beautiful finish of the wood when installed, these products require simple maintenance for primarily aesthetic purposes unless noticeable damage is seen.

Cleaning and Maintenance:

Once every five to seven years an additional coat of wood stain should be applied for preventative care of products located in moderate climates. Restorative maintenance for a more thorough refinishing may also be performed in these applications every 15 to 20 years. For more extreme environmental conditions, such as seafront installations where sand and salt are aggressive, care may be required more frequently in order to maintain the original appearance.

Use a soft cloth and a little water to clean the wood surfaces. Avoid using abrasive cleaners or pressure washers. Inspect your wood products regularly. Any damage to the stain should be addressed immediately to prevent moisture ingress and water entrapment under the coating. We strongly recommend annual inspection, cleaning, and maintenance of the wood.

Recommended Cleaning Schedule:

Normal environment: Once every 12 months

High-traffic or extreme temperature flux environment: Once every 6 months

Re-application of stain: Once every 5 years or as needed

Staining and Damage Repair:

If the wood needs reconditioning or re-coating after many years of use or due to unforeseen damage, BEGA offers a repair kit that includes sandpaper, wood filler, stain, brushes, and primer as needed. BEGA can also help identify qualified partners in your local area who can perform certified restoration of your wood products. The surface of the wood should be clean, dry, and free of dust and grease. Any contaminants under the coating can affect the finish and performance. Check the moisture content with a moisture meter. It should be less than 8% to ensure good adhesion. Maintenance should be conducted in the summer months. Damaged areas should be filled with two-component exterior wood filler. Small defects can be filled with single component fine surface exterior filler.

For cracks and discoloration or for the reapplication of stain:

1. Sand damaged areas with P220 grit sandpaper to soften the boundaries with the healthy topcoat around.
2. Apply one or several coats of the provided primer on the damaged area with a round brush until the desired color is reached. Allow each coat to dry for 2 hours before applying additional coats.
3. Apply one coat of the provided stain on the damaged area with a round brush. Allow the coat to dry for 4 hours.
4. Softly sand the entire pole with P220 grit sandpaper.
5. Apply a coat of the provided stain to the entire pole using a square brush. Allow the coat to dry for 2 hours.

High Pressure Laminate

Found in BEGA Furniture, high pressure laminate (HPL) is used as a primary construction material for certain solutions. HPL is considered to be one of the most durable decorative surface materials and is available with special performance properties including chemical, fire and wear resistance. HPL is produced by saturating multiple layers of kraft paper with phenolic resin. A layer of printed décor paper is placed on top of the kraft paper before pressing. The resulting sandwich is fused together under heat and pressure (more than 1,000 PSI). Because phenolic and melamine resins are thermoset plastics, the curing process transforms the resin into plastic by a cross linking process that converts the paper sheets into a single, rigid laminated sheet. Thermo-setting creates strong, irreversible bonds that contribute to HPL's durability.

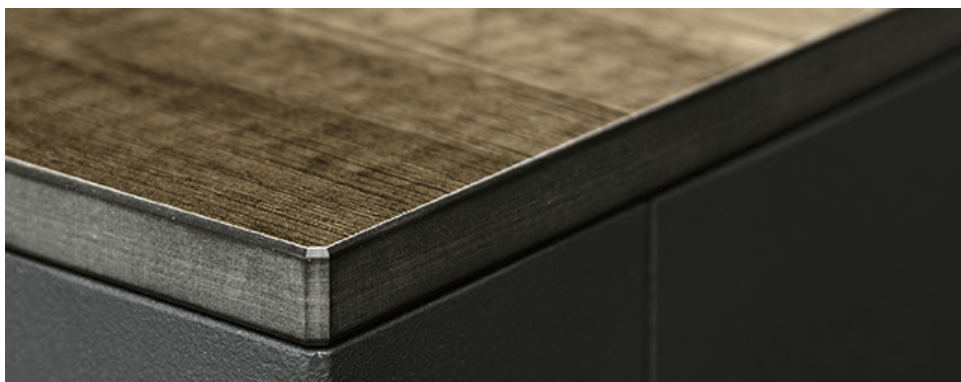
Cleaning and Maintenance:

HPL panels used in BEGA Furniture are highly durable for both interior and exterior applications. HPL is impact, weather, and scratch-resistant, making it suitable for high-traffic areas and exposure to precipitation and UV rays. HPL requires minimal maintenance.

Use a rag/cloth dampened with water to remove any contaminants/particulates from the surface of the material. If greasy, oily, or sooty substances need to be cleaned, use a white spirit free of aromatic compounds or isopropyl alcohol. Mild cleaning solutions can be used if necessary, but they are not required for regular maintenance.

Recommended Cleaning Schedule:

Clean as needed, based on the user's discretion.



High Performance Concrete

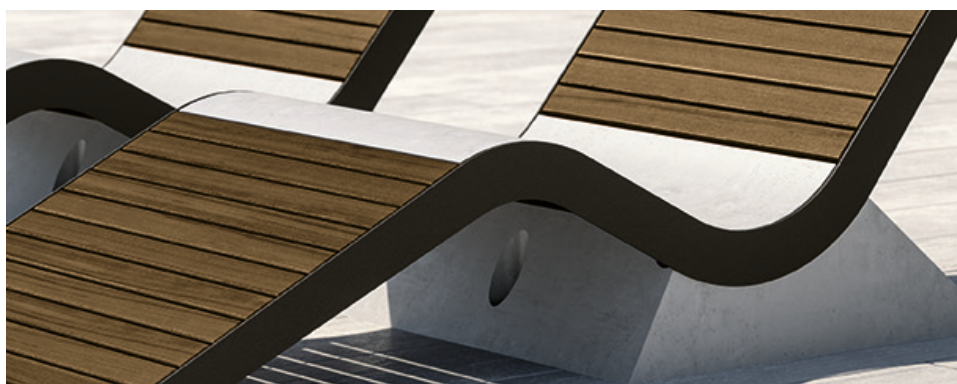
BEGA utilizes high-performance concrete (HPC) within the BEGA Furniture families. HPC exceeds the properties and constructability of normal concrete. It is designed to meet specific performance requirements and is made with carefully selected high-quality ingredients. High-performance concrete is known for its strength, durability, and high modulus of elasticity. High-performance concrete has been primarily used in tunnels, bridges, and tall buildings due to its characteristics listed above. It has also been used in shotcrete repair, poles, parking garages, and agricultural applications.

Cleaning and Maintenance:

Use a rag/cloth dampened with water to remove any contaminates/particulates from the surface of the material. The removal of other surface contaminants and graffiti can be remedied using concrete cleaning solutions, see appendix.

Recommended Cleaning Schedule:

Clean as needed, based on the user's discretion



LED / Driver Replacement Best Practices

Most electronic components we use are replaceable and not permanently connected to the luminaire. As a result, faulty components can be replaced with little effort to ensure the continued, reliable use of your luminaires. In most cases, there is no need to replace an entire luminaire.

BEGA guarantees our customers that we will continue to supply replacement LED modules up to 20 years after the purchase of an LED luminaire. Although the technology and design of the components may have changed during that time, the replacements will match the originally installed LED modules output and light color. Modular design enables these components to be replaced easily while on site using standard tools.

Each LED replacement module comes in a box to protect the components. The box will also contain a small tool that can be used to disconnect the field wires, any necessary covers or wiring connectors, and a small package of thermal grease if applicable. We also include a new label that the customer can re-apply in the fixture (for further replacements), and an instruction booklet.

For replacement drivers, the BEGA customer experience team will ensure that you either receive the driver that was provided with your original order or the most up to date version depending on the age and condition of the luminaire being serviced.

Wiring diagrams, on-site support, or factory rework options are available on request. Please contact factory for more information.

Notice to Installer:

1. All BEGA luminaires must be serviced in accordance with the applicable installation code by a person familiar with the construction and operation of the product and the hazards involved.
2. LEDs are high-quality electronic components! Please avoid touching the light output opening of the LED directly while servicing.
3. Warning: Do not use power tools to open or close luminaire, or to remove or install replacement components. Power tools can damage the components.

Instructions:

1. Ensure luminaire is off and fixture has cooled if recently illuminated before servicing.
2. Open luminaire to access LED and driver components.
Individual instructions to open each type of luminaire can be found on the product's installation instructions or can be provided by BEGA's customer experience team. Contact factory for more information.
3. Remove driver and/or LED by loosening existing hardware.
4. Cut or remove any existing wiring connectors.
5. Prepare new LED board for installation by following the instructions included with the replacement kit. This will include inserting new wires and applying thermal paste as applicable.
6. Install new components using original hardware as required or new hardware if provided.
7. Use wire management techniques to ensure no loose wires will be pinched or floating over the LED surface. Use zip ties to ensure wires stay in place.
8. Close luminaire. Ensure gasket is seated correctly if applicable. Tighten fasteners by hand in a star-pattern to ensure gasket is sealed correctly and evenly if applicable.
9. Properly dispose of the old LED module and/or driver according to local regulations and guidelines.

Appendix A: Cleaners used at the BEGA Factory

Suggested Solvent Free Cleanser – Simple Green (solvent-free all-purpose cleaner):

1. When cleaning heavy soils, pre-wet the surface.
 - a. Pre-wetting the surface helps penetrate soils and makes it easier to wipe clean.
2. Apply the solution.
 - a. Allow the Simple Green solution to soak on the surface for approximately one minute.
3. Scrub, if necessary.
 - a. Use a soft bristle brush or non-abrasive scrubbing pad to scrub the surface if needed.
 - b. Scrubbing provides agitation to loosen soils and ensure a thoroughly clean, residue-free surface.
4. Rinse with clean water.
 - a. Rinse the surface by wiping with a damp microfiber pad or non-abrasive cloth to ensure a residue-free surface.
5. Dry the cleaned surface with a clean microfiber pad, non-abrasive cloth, or paper towels.

Dilution Recommendations:

- Light Cleaning: 1 part solution to 4 parts water (1:4)
- Moderate Cleaning: 1 part solution to 1 part water (1:1)
- Heavy Soil: Use the solution without dilution (1:0)

Suggested Concrete Cleaner/ Graffiti Remover – Guard Industries Graffiti Remover

- Use the product in its pure form: do not dilute it. Shake the packaging well before use and carry out a preliminary test.
- Apply the product on the surface being treated using a brush then work the surface in circular movements.
- Let it take effect for approximately 2 to 10 minutes.
- Rinse with plenty of water at low pressure with water that is as hot as possible (increase the pressure of the hydro cleaner). Rinse with plenty of cold water to neutralise the surface.

