Safety and warranty information for using GLP lighting fixtures in outdoor environments

Rev. 20231213-01

Document revisions

Revision number	Notes	Date released
20231213-01	First document release	December 2023

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Manufacturer’s head office:
German Light Products GmbH (GLP), Industriestrasse 2, 76307 Karlsbad, Germany
Tel (Germany): +49 7248 92719 - 0

Service & Support EMEA:
GLP, Industriestrasse 2, 76307 Karlsbad, Germany
Tel. (Germany): +49 7248 9271955
Email: support@glp.de
www.glp.de

Service & Support USA:
GLP USA, 16170 Stagg St., Van Nuys, CA 91340
Tel (USA): +1 818 767 8899
Support (US): info@germanlightproducts.com
www.germanlightproducts.com

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1. Introduction

This document is a guide for the benefit of installers and users who plan to use GLP lighting fixtures in an outdoor environment. It is intended to help you get the best out of your GLP product when using it outdoors.

2. The IP rating system

IP ratings as defined by EN 60259 give clear information about a product's ability to function in a dusty, humid or wet environment. IP stands for **Ingress** (entry into the product) **Protection**:

- The first figure in an IP rating gives the level of protection against the entry of dust and airborne particles.
- The second figure gives the level of protection against the entry of water or humidity.

Note: The IP rating does not give any guidance about protection from other environmental influences.

First figure in an IP rating

First figure	Effective against	Details
X	Unknown	No data available
0	N/A	No protection against the entry of dust and airborne particles
1	> 50 mm (2.0 in)	Protected against entry of any large surface of the human body, but no protection against deliberate contact with a part of the body
2	> 12.5 mm (0.49 in)	Protection against entry of smaller surfaces of the human body (e.g. fingers) or similar objects
3	> 2.5 mm (0.098 in)	Protection against entry of tools, thick wires, etc.
4	> 1 mm (0.039 in)	Protection against most wires, thin screws, etc.
5	Dust-protected	Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the safe operation of the equipment
6	Dust-tight	No ingress of dust; complete protection against contact (dust-tight)

Second figure in an IP rating

Second figure	Effective against	Details
X	Unknown	No data available
0	N/A	No protection against entry of water
1	Dripping water	Protection against dripping water (drops falling vertically)
2	Dripping water when tilted at 15°	Protection against dripping water at up to 15° from vertical
3	Spraying water	Protection against water falling as a spray at up to 60° from the vertical
4	Splashing of water	Protection against water splashing from any direction
5	Water jets	Protection against water projected from a 6.3 mm (0.25 in) nozzle from any direction
6	Powerful water jets	Protection against water projected in powerful jets from a 12.5 mm (0.49 in nozzle from any direction
6K	Powerful water jets with increased pressure	Protection against water projected in powerful jets from a 6.3 mm (0.25 in) nozzle from any direction, under elevated pressure
7	Immersion, depth up to 1 meter (3 ft. 3 in.)	Protection against entry of water in harmful quantity at up to 1 meter (3 ft 3 in.) of submersion
8	Immersion, depth exceeding 1 meter (3 ft. 3 in.)	Equipment suitable for continuous immersion in water under conditions which the manufacturer shall specify
9	Powerful high-temperature water jets	Protected against close-range high-pressure, high-temperature spraying

The ratings for water ingress are not cumulative beyond IPX6. A device that is compliant with IPX7 (protected against water immersion up to 1 m) is not necessarily compliant with IPX5 or IPX6 (protected against exposure to water jets). A device that meets both requirements is indicated by listing both ratings separated by a slash, e.g. IPX5/IPX7.

Note: Do not install fixtures in a location where water can pool around the fixture or allow the fixture to become submerged in any other way. Do not aim low- or high- pressure water jets at fixtures.

3. Storage

Note: Make sure that devices are dry and clean before they are shipped or stored.

After use a fixture may be switched off, but it should remain connected to power in order to allow the fixture's fans to cool down the fixture.

When tearing down an installation and storing fixtures, especially in their flight cases, make sure that the fixtures are dry. Residual moisture or wetness on the fixture can lead to early corrosion or mold in flight cases or packaging.

4. Suitable environment

Note: It is essential to distinguish between temporary and permanent applications.

Certain fixtures have been designed for temporary or permanent applications under special conditions. Standard GLP-certified fixtures with an IP65 rating, for example, are designed for temporary outdoor use only. Their power and data connections, for example, are designed for flexible installation and removal, making the fixtures ideally suited to mobile applications. However, for this reason – among others – such fixtures are not suitable for permanent outdoor installation.

For permanent outdoor installation of such fixtures, the customer must provide additional protection against dust, water, temperature, UV radiation, etc. and carry out regular maintenance with scheduled service intervals.

Fixtures that are suitable for permanent outdoor installation are specially marked. An IP65 marking, for example, is not sufficient on its own to make a fixture suitable for permanent outdoor installation.

5. Coastal or maritime environments

Note: Fixtures are not generally suitable for permanent use in coastal or marine environments, regardless of whether or not they have special coatings.

Environments with atomized salt water and moisture are damaging to electronics and housings. Installing this fixture in a marine or coastal environment may result in corrosion or excessive wear to case components, optics, cooling or even the interior of the fixture. Damage or premature wear resulting from this is not covered by the manufacturer's warranty.

Fixtures that are designed for permanent use in coastal or maritime environments have a special coating for additional protection in these areas. Such additional protection applies only to the parts coated with the special paint. They do not provide complete protection against corrosion of the entire fixture.

Fixtures that are suitable for permanent use in coastal or maritime environments are specifically marked as such. A special coating marking (C-5 for example) is not sufficient on its own to make a fixture suitable for permanent use in a coastal or maritime environment.

6. Temperature fluctuation

Note: Bring the fixture up to operating temperature before using normally.

High humidity and strong temperature fluctuations can lead to condensation inside fixtures.

When a fixture is brought from a colder to a much warmer environment, the risk of condensation is particularly high. Do not switch on the fixture immediately. Let it warm up to room temperature before connecting it to power.

In order to ensure that the fixture performs as it should, we strongly recommend that you first bring the fixture to operating temperature and keep it there for at least 30 minutes. This ensures that any moisture that has accumulated internally can escape via the vent valve. The time required for residual moisture to escape completely depends heavily on the ambient conditions of the installation and must be adapted according to the situation.

For long term installation in outdoor installations, additional protective measures against dust, humidity, temperature fluctuations, UV radiation, etc. must be provided.

7. Connectors and cables

In outdoor and high-humidity environments, use IP65-rated power and data connectors and cable. When assembling connectors and installing them on cable, follow the manufacturer's instructions and ensure that an IP65 rating is maintained for the complete assembly.

Both when the fixture is being used and when it is not in use, make sure that all connections are properly plugged and tight. Use dielectric grease to ensure tightness and prevent corrosion, moisture ingress or short circuits. Make sure that the end caps or protective caps provided are properly mated and tight when the connector sockets are not in use.

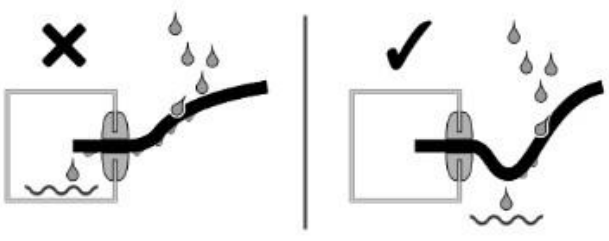
Note: Make sure that all cable connections are properly sealed, especially where a socket does not have a plug inserted in it.

Not every plug/socket combination guarantees the certified IP65 classification. Make sure that the power/data plugs used are approved for the power/data sockets with regard to dust and moisture classification.

Note: Use only suitable plug/socket combinations approved by the plug or socket manufacturer.

Make sure that cables open into dry areas or sealed junction boxes. Moisture can be drawn along cables by capillary action or pressure variations resulting from thermal expansion.

Arrange cables so that they arrive at connectors from below. Make sure that it is impossible for water to flow down cables and accumulate at connectors. If necessary, provide extra cable slack and create 'drip loops' before connectors.



Create loose cable bends only. Do not subject connections to bending forces or allow connections to bear the weight of long lengths of cable.

8. Exterior maintenance

Devices used in outdoor or harsh environments need more frequent service. If the equipment is to be used outdoors or in a harsh environment for a long period, check the installation and all cable connections regularly, at least every 30 days.

- Perform an external visual inspection of the housing surfaces, all connections, and their bolts and seals.
- Look for signs of contamination or corrosion.
- Check the optics and the cooling system for contamination.

Based on the first days of operation, plan the required maintenance actions and the maintenance intervals. Take into account the fact that maintenance work may have to be carried out outdoors.

Due to the increased environmental stress when a fixture is installed outdoors, maintenance must be carried out regardless of whether the fixture has been in operation or not.

The use of a permanent wax on the housing is recommended, as it prevents the accumulation of contaminants.

An annual inspection, both inside and outside the fixture, is recommended. To ensure water- and dust-tightness, it is advisable to replace the vent valves and seals at this time. This will ensure a reliable and long-lasting seal.

9. Guarantee and warranty

As manufacturer, GLP guarantees the specified IP certification for new products when delivered to the end customer. This is ensured through careful factory assembly and subsequent quality testing.

When a product is used correctly, as described in its operating instructions, there will be no reduction in the certified water and dust resistance after delivery.

However, all fixtures are subject to normal wear and tear – including aging of seals – after prolonged or repeated use, especially outdoors. This leads to a gradual decline in water and dust resistance. For this reason, leak tests must be carried out by the user at regular intervals, depending on the type of use.

Water or dust damage caused by improper use, failure to carry out regular leak tests or failure to close a fixture properly after service is expressly not covered by the manufacturer's warranty.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