Velodyne® LiDAR

Field Application Note

VLP-16 Lens Cleaning Procedure

How to clean your VLP-16 LiDAR Sensor

Safety Notices

Caution

To reduce the risk of electric shock and to avoid violating the warranty, do not remove cover (or back). Refer servicing to qualified service personnel.

The lightning flash with arrowhead symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

1. **Read Instructions —** All safety and operating instructions should be read before the product is operated.
2. **Retain Instructions —** Retained these instructions for future reference.
3. **Heed Warnings —** All warnings on the product and in the operating instructions should be adhered to.
4. **Follow Instructions —** All operating and use instructions should be followed.
5. **Servicing —** The user should not attempt to service the product beyond what is described in these instructions. All other servicing should be referred to Velodyne.

Warning - Please read through this entire document before cleaning your sensor!

Required Materials:

1. Clean microfiber cloths
2. Warm water
3. Mild liquid dishwashing soap
4. Spray bottle with clean water
5. Spray bottle with mild soapy water.
6. 99% Isopropyl alcohol (Method 2 ONLY)
7. NACL Precision Optics Cleaner (Optional)

Avoid using hard water when cleaning the sensor.

Determine the manufacturing date of your sensor

The first five characters of your serial number represent the year (AE=2015) and the day of manufacture (031=January 31st) of your sensor. If the first five characters of your serial number are between AE001 and AE229 clean the sensor using **Method 1** below.

If the first five characters of your serial number are AE230 or later, or if your sensor was serviced by Velodyne after August 17th 2015, use **Method 2** below.

If you have any question about the status of your sensor after servicing please contact lidarservice@velodyne.com for advice.

Method 1

These ring lenses are acrylic and **MUST NOT BE CLEANED WITH AN ALCOHOL-BASED CLEANER**. An alcohol-based cleaner will cause the ring lens on your sensor to crack.

If your sensor is caked with mud or bugs use the spray bottle to loosen any debris from the sensor. Do not wipe dirt directly from the sensor - spray it off with warm water first. Then use warm, mildly-soapy water and gently wipe the sensor with a clean microfiber towel. Wipe along the curve of the sensor and not top-to-bottom. Spray the sensor with clean water to rinse off the soap and dry with a second microfiber towel.

Method 2

These ring lenses are made from polycarbonate and may be cleaned with isopropyl alcohol. If your sensor is caked with mud or bugs use the spray bottle to loosen any debris from the sensor. Do not wipe dirt directly from the sensor - spray it off with warm water first.

If necessary, use the 99% isopropyl alcohol and a clean microfiber towel to clean any bug splatter or other debris from the sensor. Then use warm, mildly-soapy water and gently wipe the sensor with a clean microfiber towel. Wipe along the curve of the sensor and not top-to-bottom. Spray the sensor with clean water to rinse off the soap and dry with a second microfiber towel.

Optional Cleaning Method

North American Coating Lab has formulated a cleaning solution for Velodyne Optics. The NACL part number is: 98-0020. Description: NACL Precision Optics Cleaner 6 oz. This can be ordered directly from them.

North American Coating Laboratories
9450 Pineneedle Dr. Mentor, OH 44060
Toll-Free: (866) 216-6225
Tel: (440) 357-7000
Fax: (440) 357-7001
Email: info@nacl.com
http:// www.nacl.com

To use:

1. Spray onto clean microfiber cloth
2. Wipe down the VLP-16 ring lens.

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