

WHITE PAPER

Chemical resistance to common cleaning agents

AXIS Q9307-LV Dome Camera

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1 Introduction

Surveillance cameras may be needed also in environments where hygiene requirements are rigorous. Cleaning of the camera exterior could be required daily or even several times a day.

This white paper discusses the recommended cleaning procedure for AXIS Q9307-LV Dome Camera and presents the testing that Axis has done to verify that the camera withstands this procedure.

2 Recommended cleaning

The recommended cleaning procedure involves chemical wipedown using a soft cloth with either isopropanol (IPA), sodium hypochlorite (a chloride-based bleach), or hydrogen peroxide, mixed with water. These chemical solutions are all commonly used as cleansers or disinfectants for healthcare equipment.

It is up to the user to ensure that the cleaning products they use are based on the recommended chemicals and do not contain substances that can have a negative effect on the camera. If you need to use a spray product, you should spray on a cloth and wipe the camera with the cloth.

3 Chemical resistance tests at Axis

Chemical wear is complex because it depends on the nature of chemical contact, such as composition of chemical, exposure time, temperature, and the level and type of stress that the part is subjected to. For this reason, we have tested our materials under realistic end-use conditions. We have verified the chemical resistance through two types of in-house testing: environmental stress crack resistance testing and cleaning simulations.

The chemicals we used are:

- Isopropanol (70%)
- Hydrogen peroxide (3%)
- Sodium hypochlorite (< 5%)
- Acetic acid (10%)
- Peracetic acid (0.12%)

The testing showed that the plastic materials of the camera's casing and dome withstand regular and frequent chemical wipedown with a soft cloth. There is no chemical reaction between the plastics and the cleansers. Even with long-term repeated exposure, the physical integrity of the camera is maintained.

3.1 Environmental stress cracking resistance test

Various materials were evaluated in environmental stress cracking resistance tests (ESC tests) in order for us to find a material that is suitable for cameras that need to be frequently cleaned.

In an ESC test, a test sample of the material is subjected to mechanical stress in combination with exposure to the selected chemical. During the test, the sample is periodically controlled for cracks, color changes, and other defects. After completed testing, the sample is again evaluated for defects.

The ESC tests were performed with a setup based on existing industry standards. The tested parts were exposed to the same level of mechanical stress as required according to the standard.

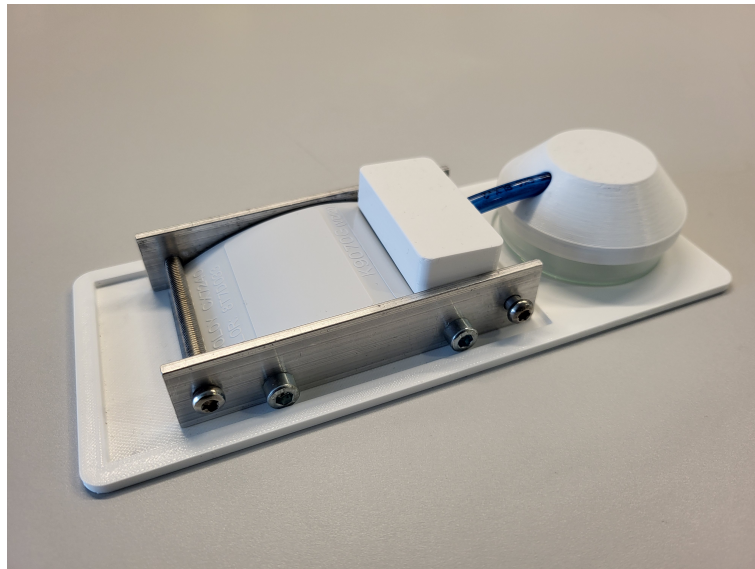


Figure 3.1 *Setup for environmental stress cracking resistance tests.*

3.2 Cleaning simulation

Cleaning simulation tests were performed to simulate repeated cleaning over many years of usage.

Samples of the casing and dome of AXIS Q9307-LV Dome Camera were mounted in a piece of automated test equipment that repeatedly swiped the samples with a soft cloth that was saturated with the selected chemical. The swipes were done using pressure typical for cleaning, and the cloth was resaturated regularly. The samples were tested for a minimum of 1850 cycles, which corresponds to daily cleaning for five years.



Figure 3.2 *Set up for the cleaning simulation. The samples are swiped with a cloth mounted on an automatic movable arm.*

After completed testing, the samples were evaluated for scratches, cracks, discoloration, wear of logotype, and other defects.

4 Appendix

Appendix 1 Other tested products

The following Axis products have also been tested and verified according to the procedures described in this white paper.

- AXIS Q6075–E PTZ Network Camera
- AXIS P3265–LVE Dome Camera
- AXIS P3267–LVE Dome Camera
- AXIS M4318–PLVE Panoramic Camera
- AXIS M5526–E PTZ Camera
- AXIS TP3804–E Metal Casing White

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Axis has around 5,000 dedicated employees in over 50 countries and collaborates with technology and system integration partners worldwide to deliver customer solutions. Axis was founded in 1984, and the headquarters are in Lund, Sweden.