



# Fraunhofer

## TESTED<sup>®</sup> DEVICE

Pfennig Reinigungstechnik GmbH  
Clino CR-X

**Report No. PF 2501-1582**

DUPLICATE

Statement of  
Qualification

Single product  
Riboflavin Test  
(Equipment)

Customer

Pfennig Reinigungstechnik GmbH  
Heubachstrasse 1  
87471 Durach  
Germany

Tested product

Category:

Working Place and Operator

Subcategory:

Work Equipment

Product name:

Cleaning trolley Clino CR-X  
(manufacturing date: 10/8/2024; material: stainless steel; article number: 3500230 (Metal sheet CR-X2), 3500231(Metal sheet CR-X3), 3500232 (Metal sheet CR-X2+), 3500233 (Handle high), 3530184 (Insert for bag holder frame), 3500234 (Handle low), 3530181 (Insert for bag holder frame), 3500100 (Stainless steel roller), 3500150 (Stainless steel roller with brake), 3500084 (Cover disk), 3013430 (ESD plastic roller), 3013430 (ESD-roller with plastic locking device), 3500235 (Roller spacer), 3500236 (Sealing disk), 3500238 (Stud screw), 3500239 (Pan head screw), 3500240 (Truss head screw), 3500089 (MopDrop CR Protect))

Cleanability test (riboflavin test)

Standards/guidelines:

VDMA information sheet »Riboflavin test for low-germ or sterile process technologies – Fluorescence test for examination of cleanability«. The norms stated generally refer to the version valid at the time of the tests.

Test environment parameters:

Laboratory

Test procedure parameters:

• Test solution: .....0.2 g riboflavin, 1.0 g hydroxethylcellulose .....in 1000 ml ultrapure water

• Application of test solution:..... pump spray

• Drying time: ..... approx. 2 -3 h

• Cleaning method:..... wiping

• Cleaning medium: .....ultrapure water

• Number of wiping cycles: ..... 3

• UV-light: .....λ = 366 nm

The cleanability is examined and assessed qualitatively. The assesement based on the amount and size of defects occuring.

Test result / Classification

The cleaning trolley Clino CR-X can be cleaned simply by wiping it with ultrapure water. However, the fluorescence test identified several critical areas. However, the fluorescence test identified individual critical areas. These areas have to be cleaned especially thoroughly or using a more complex procedure, e.g. by removing certain parts before cleaning.

System component	Assessment of cleanability
Clino CR-X	very good

The measuring devices used for the qualification tests are calibrated at regular intervals; their results can be traced back to national and international standards. In cases where no national standards exist, the test procedure implemented complies with the technical regulations and norms applicable at the time of the test. The relevant documentation can be viewed on request at any time.

Detailed information and parameters of the test environment can be found in the Fraunhofer IPA test report.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

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on behalf of


Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA

Stuttgart, February 25, 2025


Place, date of first document issued

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Place, current date



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