## ISO 20468-4:2021 (E)

## Guidelines for performance evaluation of treatment technologies for water reuse systems — Part 4: UV Disinfection

## Contents

Foreword

## Introduction

- 1 Scope
- 2 Normative references
- 3 Terms, definitions and abbreviated terms
  - 3.1 Terms and definitions
  - 3.2 List of abbreviated terms
- 4 Purpose and function of UV disinfection
  - 4.1 Purpose
  - 4.2 Function
- 5 System configuration
  - 5.1 General
  - 5.2 UV unit
  - 5.3 Influent water quality monitoring devices
  - 5.4 Flow meter
  - 5.5 Power control panel
- 6 Functional requirements
  - 6.1 General
  - 6.2 Evaluation of the UV unit performance
  - 6.3 Method of monitoring UV treatment system performance
  - 6.3.1 Monitoring of influent water flow [M1]
  - 6.3.2 Quality control of influent water [M2]
  - 6.3.3 Monitoring of UV irradiation [M3]
  - 6.3.4 Monitoring of treated water quality [M4]
  - 6.4 Diagnosis of causes for system failure
- 7 Non-Functional requirements
  - 7.1 Environmental performance
  - 7.1.1 Energy efficiency
  - 7.1.2 Chemical consumption
  - 7.2 Safety
  - 7.3 Cost effectiveness of systems Economic evaluation by LCC
  - 7.4 Reliability and resilience
- Annex A (informative) Main treatment technologies and target constituents for water reuse
- Annex B (informative) Experimental evaluation method for UV units
  - B.1 Preliminary testing
  - B.2 Full-scale testing
  - B.3 Determine the RED
- Annex C (informative) Experimental evaluation method in combination with CFD-I simulations1
  1 Excerpt from "Technical examination standard for UV irradiation equipment" Japan Water Research Center (2012).
  - C.1 General
  - C.2 Evaluation procedure

- C.3
- C.4
- UV irradiance test on lamps Biodosimetry test in reference unit Creation of analysis model of reference unit C.5
- Setting of calculation conditions C.6
- C.7
- Evaluation of analysis results Calculation of UV dose of evaluation target device C.8

Page count: 18