

CANDELA UV

UV-C Based Submerged Water Disinfection System

Clean Water. Clean Tanks. Better Health.

The Smarter Way to Disinfect Stored Water

Candela UV™ ensures microbiologically safe water in your overhead tank using proven UV-C technology with multi-pass recirculation – chemical-free, maintenance-friendly and built for Indian conditions.

INLET
From Overhead
Tank / Pump

SAFE WATER OUTLET
To Your Home

CANDELA UV™
Submerged
UV Disinfection
Device

DISINFECTION
UV-C light (254nm)
inactivates 99.99% of
bacteria, viruses &
pathogens



Chemical-Free
Disinfection



99.99% Pathogen
Inactivation



Multi-Pass
Recirculation



Low Maintenance
& Easy Operation



Energy Efficient
& Cost Effective

CANDELA UV

UV-C based submerged water disinfection system for stored water tanks

Submerged UV-C reactor engineered for stored tank water.

Pump-assisted recirculation supports repeated exposure and broader coverage.

Configurable single-unit or modular array installation for villas, schools, hospitals and commercial buildings.

Chemical-free approach: no dosing, no residual taste and lower handling risk.

CONTROLLED ANNULAR UV-C REACTOR

High-Dose Exposure in a Controlled Narrow Water Path



Controlled exposure. Controlled dose. Better disinfection.

Hidden Water Risk in Homes

A 4-step journey from contamination to illness

Bird-borne contamination may enter overhead tank water.

Stored water reaches household taps for daily activities.

Families may unknowingly use contaminated water for washing and food-related use.

Candela UV™ helps protect stored water before it reaches users.

Protect your family. Protect your health.

Hidden Water Risk in Homes

A 4-step journey from contamination to illness.



- 1**
Bird contamination in overhead tank
Bird-borne contamination can introduce harmful bacteria, viruses and parasites into stored water.
- 2**
Contaminated water reaches the home
Unsafe water reaches taps used for daily household activities.
- 3**
Arabic family uses the water
Families may unknowingly use contaminated water for daily washing and food-related activities.
- 4**
Leads to sickness & health risk
Unsafe water can increase the risk of stomach infections and other illnesses.



Candela UV

Protects stored water





Bacteria Virus Parasites

Safe water.
Healthy family.



Protect your family. Protect your health.
Use Candela UV for safe & pure water.



Hotels & Restaurants

Protect every drop. Protect every customer.

Overhead tank contamination can reach kitchen and wash-area taps.

Guests and staff may use water unknowingly for handwashing and cleaning.

Contaminated water can affect guest health and business reputation.

Candela UV™ supports safe water for hospitality operations.

Clean water. Safe people. Stronger reputation.

HIDDEN WATER RISK in HOTELS & RESTAURANTS

Bird droppings and dirt contaminate overhead tanks, putting customers' health at serious risk.

1

Bird droppings contaminate overhead tanks

Bird droppings, dust and dirt enter the overhead tank and pollute the stored water.



2

Contaminated water reaches restaurant taps

Contaminated water flows through pipes and reaches taps used for washing hands, utensils and mouth.



3

Customers use the water unknowingly

Customers wash hands and mouth with contaminated water, unknowingly ingesting harmful germs.



4

Leads to stomach infections & food poisoning

Harmful germs enter the body and cause stomach infections, food poisoning, diarrhea and other illnesses.



RESTAURANT



Candela UV

Protects every drop.
Protects every customer.



Safe water.
Healthy guests.
Trusted business.



Clean water. Safe people. Stronger reputation.
Use Candela UV for safe & pure water.



Hospital Water Risk

From groundwater infiltration to patient infections

Patients can be highly vulnerable to waterborne contamination.

Hospital water is used for bathing, cleaning, drinking and routine care.

Safer stored water supports infection-risk reduction strategies.

Candela UV™ helps protect hospital water and patient safety.

Clean water is critical in healthcare.

HIDDEN WATER RISK in HOSPITALS

From groundwater infiltration to patient infections.
A silent threat within.

1

Groundwater infiltration

Contaminated groundwater seeps through pipelines and enters the overhead tank.



2

Contamination spreads in hospital water

Contaminated water from the overhead tank is used for bathing, cleaning, drinking and other daily activities.



3

Patients are highly vulnerable

Weak immunity, ongoing treatment and open wounds increase the risk of severe infections and complications.



4

Leads to more sickness & longer recovery

Waterborne infections can lead to complications, longer hospital stays, higher medical costs and even life-threatening conditions.



Candela UV

Protects hospital water.
Protects more lives.



Safe water.
Safer patients.
Stronger recovery.



Clean water is critical in healthcare.
Use Candela UV for safe & pure water.



Spas & Wellness Centers

Clean water is the foundation of wellness

Water is used in pools, jacuzzis, steam, showers and rinsing.

Germs can enter the body through skin contact, inhalation or swallowing water.

Poor water hygiene can cause customer complaints and health concerns.

Candela UV™ supports safer water for wellness environments.

Safe water. Healthy families. Peace of mind.

HIDDEN WATER RISK in SPAS & WELLNESS CENTERS

Contaminated water in spas can cause skin infections, stomach illness and other health problems. A hidden danger with serious risk.

1

Contamination in overhead tanks

Dirt, bacteria and biofilm build up in overhead tanks and contaminate the stored water.



2

Contaminated water used in spa activities

Contaminated water is used in pools, jacuzzis, steam, showers and for washing & rinsing.



3

Germs enter the body

Through skin, inhalation of steam or swallowing water, germs enter the body and cause infections.



4

Health problems and long-term complications

Infections can cause skin rashes, ear & eye infections, stomach illness, and other serious health issues.



Candela UV

Protects spa water.
Protects your family.



Safe water.
Healthy families.
Peace of mind.



Clean water is the foundation of wellness.
Use Candela UV for safe & pure water.



Shopping Mall Food Courts

Protect customers. Protect reputation.

Overhead tank contamination can reach wash basins and food-court taps.

Customers and staff use water before eating and during cleaning operations.

Clean stored water helps reduce illness risk and improve customer confidence.

Candela UV™ supports safer water for high-footfall public facilities.

Safe water. Healthy customers.

Hidden Water Risk in Shopping Mall Food Courts

A 4-step journey from contamination to illness.

1

Bird contamination in overhead tank

Bird droppings, dust and dirt can introduce harmful bacteria, viruses and parasites into stored water.



2

Contaminated water reaches wash area

Unsafe water flows through pipes and reaches taps used in the mall food court wash basin area.



3

Customers use the water

Customers may unknowingly use contaminated water to wash hands and rinse the mouth before or after eating.



4

Leads to sickness & stomach illness

Unsafe water can lead to stomach infections, nausea and other illness.



Candela UV

Protects stored water



Bacteria



Virus



Parasites



Safe water.
Healthy customers.



Protect your customers. Protect your reputation.
Use **Candela UV** for safe & pure water.



Farms & Agriculture

Clean water. Healthy animals. Higher productivity.

Contamination in water sources can affect animal health and productivity.

Stored water may be used for drinking, irrigation, washing and equipment cleaning.

Cleaner water can support healthier animals and reduce operational risk.

Candela UV™ provides a scalable stored-water hygiene solution for farms.

Safe water. Healthy animals. Stronger farm. Better future.

HIDDEN WATER RISK on FARMS

Contaminated water on farms can harm animals, reduce productivity and affect your income. A hidden threat with serious consequences.



1

Contamination in water source

Bacteria, chemicals and waste seep into groundwater and contaminate the stored water.



2

Contaminated water used on the farm

Contaminated water is used for drinking, washing animals, irrigation and cleaning equipment.



3

Animals become sick & stressed

Dirty water weakens immunity, causes diseases, poor growth, low milk production and higher vet costs.



4

Lower productivity & loss of income

Poor animal health leads to low yield, higher treatment costs and loss of profits.



Candela UV

Protects your farm.
Protects your livelihood.



Safe water.
Healthy animals.
Stronger farm.
Better future.



Clean water. Healthy animals. Higher productivity.
Use Candela UV for safe & pure water.



Scientific Basis

Three simultaneous mechanisms support stored water hygiene

Direct UV-C germicidal inactivation at 254 nm.
Controlled recirculation creates repeated exposure in the tank volume.
Continuous microbial reduction helps suppress surface colonization and biofilm formation.

Science-based UV-C disinfection. Repeated exposure. Cleaner tanks. Safer stored water.

SCIENTIFIC BASIS OF OPERATION

The technology operates through three simultaneous mechanisms

1. DIRECT UV-C GERMICIDAL INACTIVATION

UV-C radiation at 254 nm penetrates microorganisms and induces photochemical damage to DNA and RNA. This prevents replication and causes microbial inactivation.

TARGET ORGANISMS INCLUDE:



BACTERIA
Escherichia coli, Salmonella spp., Shigella spp., Pseudomonas aeruginosa, Legionella pneumophila, Campylobacter spp.



VIRUSES
Hepatitis A Virus, Norovirus, Rotavirus, Enteroviruses, Adenoviruses.



PROTOZOA
Giardia lamblia, Cryptosporidium.

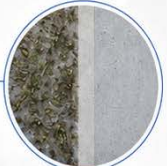


NUISANCE ORGANISMS
Green algae, Cyanobacteria, Mould spores, Yeasts, Biofilm-forming microorganisms.





MICROBES INACTIVATED
UV-C radiation damages DNA/RNA and prevents replication, resulting in microbial inactivation.



BIOFILM SUPPRESSED
Continuous reduction of microbes in water helps prevent colonization and biofilm growth on internal surfaces.

2. CONTROLLED RECIRCULATION & REPEATED EXPOSURE

Pump-assisted circulation repeatedly transports stored water through the UV-C exposure zone. This improves exposure uniformity, reduces stagnant zones, and helps deliver whole-tank microbiological control.

3. BIOFILM SUPPRESSION

Biofilms originate from planktonic microorganisms suspended within water. By continuously reducing microbial concentrations in the bulk water phase, Candela UV™ suppresses surface colonization, slime formation, biofilm maturation, and microbial growth on tank walls.

- Surface colonization
- Slime formation
- Biofilm maturation
- Tank walls



Science-based UV-C disinfection. Repeated exposure. Cleaner tanks. Safer stored water.

Clean Water. Clean Tanks. Better Health.

CFD-Based Array Formation

Engineered placement based on tank hydraulics

Vertical arrays for deep tanks and reservoirs.
Horizontal arrays for shallow or long rectangular tanks.
Hybrid arrays for complex tanks requiring depth-wise and lateral circulation.
Modular treatment zones make large reservoirs scalable.

Candela UV™ is engineered around the tank — not forced into a fixed layout.

CFD-BASED ARRAY FORMATION

Engineered Placement Based on Tank Hydraulics

VERTICAL ARRAY

Suitable for deep tanks, cylindrical tanks, overhead tanks, and reservoirs where depth-wise circulation is important.

HYBRID ARRAY

Suitable for complex tanks where both depth-wise and lateral circulation are required.

HORIZONTAL ARRAY

Suitable for shallow tanks, long rectangular tanks, underground reservoirs, and tanks where lateral flow coverage is required.

PROJECT STUDY PARAMETERS

- Tank volume
- Water depth
- Tank shape
- Inlet and outlet location
- Access opening position
- Operating water level
- Dead zone possibility
- Mixing pattern
- Required turnover rate
- Maintenance access
- Power and control routing

ENGINEERING BENEFIT

The modular approach reduces under-treated regions in large tanks and provides a practical method to scale UV-C disinfection without depending on a single large reactor.

MODULAR TREATMENT ZONES

Large Reservoirs Can Be Divided Into UV-C Protection Zones

- One UV module may be considered for approximately 1 m³ / 1000 L treatment zone, subject to project validation.
- Each module can include its own UV chamber and micro pump.
- Float switch or level sensor can control operation based on water level.
- Pump speed or flow control can maintain required exposure time.
- Multiple modules can operate independently.
- One unit can be isolated for maintenance while others continue operation.

Candela UV™ is engineered around the tank — not forced into a fixed layout.
Independent modules. Wider coverage. Better reliability.

Tank Internal Hygiene Benefit

Beyond water disinfection: supporting cleaner tank surfaces
Longer Cleaning Gaps. No Hard Scrubbing. Longer Tank Life.

Supports tank hygiene management between scheduled cleaning cycles.

Low water levels expose more tank wall area to UV-C radiation near the irradiation zone.

Chemical-free protection helps avoid smell, taste and dosing concerns.

Reduces microbial risk in stored water environments.

Cleaner water begins with a cleaner tank environment.

TANK WALL HYGIENE BENEFIT

Beyond Water Disinfection: Supporting Cleaner Tank Surfaces

IMPORTANT POSITIONING

✓ Candela UV™ supports tank hygiene management.

📅 It does not eliminate the need for scheduled physical tank cleaning.

🦠 It reduces microbial risk between cleaning cycles.

💧 It helps maintain a cleaner water storage environment.

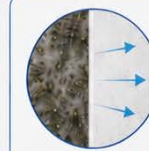


CHEMICAL-FREE FAMILY PROTECTION

No Chemicals. No Residuals.
No Dosing Error.

Candela UV™ uses UV-C light for disinfection. It does not add chemicals to the tank water. For villas and premium homes, this provides a strong advantage over chemical dosing methods, especially where taste, odor, chemical handling, and maintenance are concerns.

- 🌬️ No chlorine smell
- 🥤 No chemical taste
- 📦 No chemical storage
- ⚙️ No dosing pump calibration
- 🧤 No chemical handling risk
- 💧 No overdose or underdose issue
- 💧 No change in water appearance
- 🔄 Suitable for continuous protection



TANK WALL HYGIENE SUPPORT

When water level is low, UV-C radiation can reach more exposed tank wall areas near the irradiation zone. This may help suppress microbial growth and biofilm activity on exposed internal surfaces, supporting improved tank hygiene.



CLEANER WATER BEGINS WITH A CLEANER TANK ENVIRONMENT.



PURE TECHNOLOGY FOR SAFER STORED WATER – WITHOUT ADDING ANYTHING TO YOUR TANK.

Villa Application

Single-unit installation for small-capacity overhead tanks

Compact single-unit system for villa and home water tanks.
Continuous disinfection for daily domestic water usage.
Chemical-free operation with low maintenance requirements.
Ideal for villas, homes and premium residences.

Safe water. Healthy living.

VILLA APPLICATION

Small-Capacity Overhead Tank with Single-Unit Installation

SAFE WATER. HEALTHY FUTURE.

✗ Villa – Unhygienic Tank

- Algae & Bacteria Growth
- Turbid & Discolored Water
- Stagnant Water Storage
- Health Risk for Family

✓ Villa – Hygienic Tank with UV Equipment

- Crystal Clear & Safe Water
- Single UV Unit for Villa Tanks
- Chemical-Free Treatment
- Low Maintenance
- Safe Water for Family

Clean Water. Healthy Living.

A single Candela UV unit ensures complete disinfection, removes harmful microorganisms, and keeps your family protected every day.

- ✓ Continuous Disinfection
- ✓ No Chemicals, No Residuals
- ✓ Reliable & Energy Efficient
- ✓ Ideal for Small-Capacity Tanks

SAFE & CLEAN WATER

Eliminates 99.9% of bacteria & viruses for safe drinking and daily use.

CHEMICAL-FREE TREATMENT

UV disinfection treats water without adding chemicals, odors, or aftertaste.

SINGLE-UNIT SOLUTION

Compact and effective UV unit designed specially for villa overhead tanks.

LOW MAINTENANCE & RELIABLE

Built for long life with minimal upkeep and consistent performance.

SAFE FOR THE WHOLE FAMILY

Provides pure, healthy water for bathing, cooking, and drinking.

Ideal for Villas, Homes, and Premium Residences.

Clean Water. Clean Tanks. Better Health.

Commercial Buildings

Large-capacity tank with array installation

Multi-module UV arrays for wide hydraulic coverage.
Redundancy improves reliability and continuous operation.
Supports consistent stored water quality across high-use buildings.
Suitable for offices, hotels, malls and large facilities.

Large-capacity tanks benefit from modular array installation.

COMMERCIAL BUILDING

Large-Capacity Tank with Array Installation

SAFE WATER. HEALTHY FUTURE.

✗ Commercial Building – Unhygienic Tank

- Biofilm and Sludge Accumulation
- Bacteria & Pathogen Growth
- Poor Water Quality
- Dead Zones & Stagnant Water
- Risk to Health & Building Systems

✓ Commercial Building – Hygienic Tank with Array Installation

- Multi-Module UV Array for Wide Coverage
- Eliminates 99.9% Bacteria & Viruses
- Consistent Water Quality
- No Chemicals, No Residuals
- Reliable, Low Maintenance





Large-Capacity Tanks Benefit from Array Installation

Multiple UV modules work together to deliver uniform disinfection, eliminate dead zones, and ensure system reliability.

- ✓ Wider Hydraulic Coverage
- ✓ Redundant & Reliable Operation
- ✓ Consistent Disinfection Performance
- ✓ Ideal for High-Volume Commercial Buildings



SAFE & CLEAN WATER

Eliminates 99.9% bacteria & viruses for healthier building occupants.



CHEMICAL-FREE TREATMENT

UV disinfection requires no chemicals and leaves no harmful by-products.



OPTIMIZED HYDRAULIC COVERAGE

Array installation ensures uniform exposure and eliminates dead zones.



RELIABLE & REDUNDANT

Multiple modules provide backup and uninterrupted protection.



LOW MAINTENANCE & COST-EFFECTIVE

Long lamp life and simple maintenance reduce operational costs.



Ideal for Office Complexes, Hospitals, Hotels, Schools, Malls and Other Large Commercial Facilities.

Schools & Campuses

Medium-capacity tank with multi-unit installation

Multi-unit UV array for medium-size institutional tanks.
Designed to reduce dead zones and support
consistent performance.
Supports safe drinking and utility water for students
and staff.
Ideal for schools, colleges and educational campuses.

Safe water. Healthier futures.

SCHOOL – SAFE WATER, HEALTHIER FUTURES

Medium-Capacity Tank with Multi-Unit Installation

SAFE WATER. HEALTHY FUTURE.

✗ School – Unhygienic Tank

- Bacteria Contamination
- Murky & Discolored Water
- Sediment Buildup
- Risk to Student Health

✓ School – Hygienic Tank with UV Array Installation

- Clear, Clean & Safe Water
- UV Array for Wider Coverage
- Safe Drinking & Utility Water for Students
- Chemical-Free Treatment
- Reliable & Consistent Operation



Multi-Unit UV Array for Medium Tanks

Two to four UV modules are installed in parallel to deliver uniform disinfection, eliminate dead zones, and ensure consistent, reliable performance.

- ✓ Wider Disinfection Coverage
- ✓ Redundant & Reliable Operation
- ✓ Consistent Water Quality
- ✓ Ideal for Schools & Campuses

SAFE & CLEAN WATER

Eliminates 99.9% bacteria & viruses for student protection.

CHEMICAL-FREE TREATMENT

UV disinfection requires no chemicals and leaves no harmful by-products.

OPTIMIZED WATER QUALITY

Ensures clear, odor-free water for drinking and everyday use.

RELIABLE & DURABLE

Engineered for continuous operation with minimal maintenance.

LOW MAINTENANCE & COST-EFFECTIVE

Long lamp life and simple maintenance reduce operational costs.

 **Ideal for Schools, Colleges, and Educational Campuses**

Hospitals & Healthcare

High-capacity critical water tanks with array installation

High-volume disinfection for critical-use water storage.
Uniform UV coverage with redundant and reliable modules.

Designed for continuous healthcare water demand.
Ideal for hospitals, clinics and medical centers.

Safe water is critical in healthcare.

HOSPITAL

Large-Capacity Critical Water Tank with Array Installation

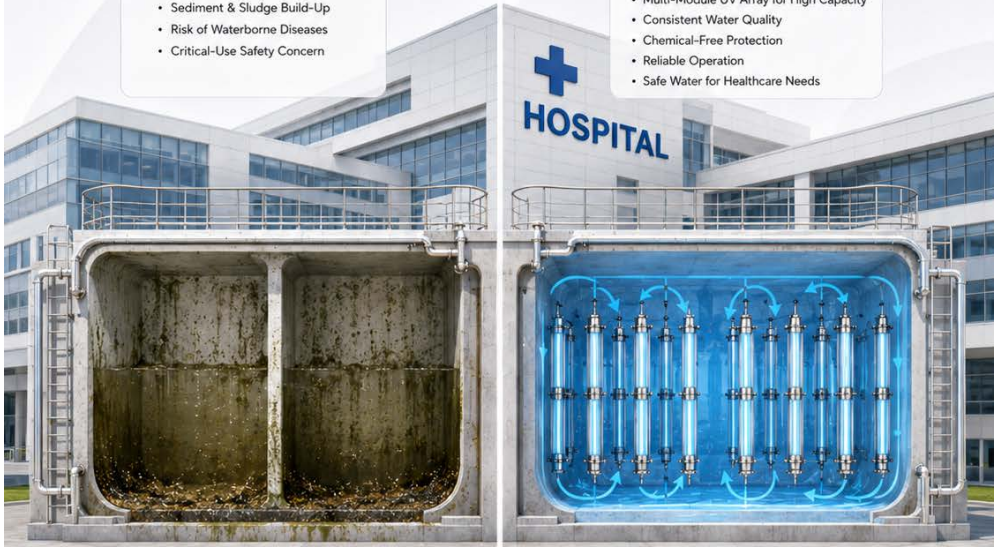
SAFE WATER. HEALTHY FUTURE.

✗ Hospital – Unhygienic Tank

- Biofilm Formation
- Sediment & Sludge Build-Up
- Risk of Waterborne Diseases
- Critical-Use Safety Concern

✓ Hospital – Hygienic Tank with Array Installation

- Multi-Module UV Array for High Capacity
- Consistent Water Quality
- Chemical-Free Protection
- Reliable Operation
- Safe Water for Healthcare Needs



High-Capacity Array Installation for Critical Water Safety

Multiple UV modules are installed in parallel to deliver powerful, uniform disinfection across large volumes—eliminating pathogens, biofilm, and ensuring reliable performance for healthcare facilities.

- ✓ High-Volume Disinfection
- ✓ Uniform UV Coverage
- ✓ Redundant & Reliable Operation
- ✓ Consistent Water Quality
- ✓ Built for Continuous Healthcare Use

SAFE & CLEAN WATER

Eliminates 99.9% bacteria, viruses & pathogens for critical-use areas.

CHEMICAL-FREE TREATMENT

UV disinfection requires no chemicals and leaves no harmful by-products.

CONSISTENT WATER QUALITY

Maintains stable, high-quality water across all critical systems.

RELIABLE & CONTINUOUS

Engineered for 24/7 operation with minimal interruption.

LOW MAINTENANCE & COST-EFFECTIVE

Long lamp life and simple maintenance reduce operating costs.

 Ideal for Hospitals, Clinics, Medical Centers and Other Healthcare Facilities.

Design & Safety Framework

Reference standards for UV-C systems used in potable water applications

Reactor philosophy aligns with recognized UV, safety and drinking-water benchmarks.
System incorporates double quartz sleeves, submerged sealing and electrical isolation.
ISO 9001 quality management supports controlled manufacturing and testing.
Reference standards are shown as design and application benchmarks.

Engineered for safe submerged UV-C disinfection in potable water tanks.

COMPLIANCE WITH INTERNATIONAL STANDARDS

Candela UV™ Design & Safety Framework

Our reactor is designed with reference to leading international standards and best practices for UV disinfection systems used in potable water applications. Quality and safety are engineered into every detail.

THE REACTOR DESIGN PHILOSOPHY ALIGNS WITH:

-  **IS 14724**
Ultraviolet disinfection systems for water – Performance requirements
-  **IS 10500**
Drinking water – Specification
-  **NSF/ANSI 55 Class A**
Ultraviolet microbiological water treatment systems
-  **DVGW W294**
Disinfection systems in drinking water installation
-  **ÖNORM M 5873**
Requirements for UV disinfection systems
-  **USEPA UVDGM**
Ultraviolet Disinfection Guidance Manual
-  **IEC 60335-2-109**
Safety of household and similar electrical appliances – Part 2-109: Particular requirements for UV water purifiers
-  **IEC 60529**
Degrees of protection provided by enclosures (IP Code)

Reference standards are shown as relevant design and application benchmarks.

SYSTEM INCORPORATES:

-  Double quartz sleeve isolation
-  IP68-equivalent sealing architecture
-  Potting-compound cable protection
-  Electrical isolation from water
-  Corrosion-resistant SS316 and SS304 construction

ISO 9001 QUALITY MANAGEMENT

-  Manufacturing and quality systems operate under ISO 9001 quality management principles.

SAFE SUBMERGED OPERATION

-  These features support safe continuous submerged operation in potable water environments.



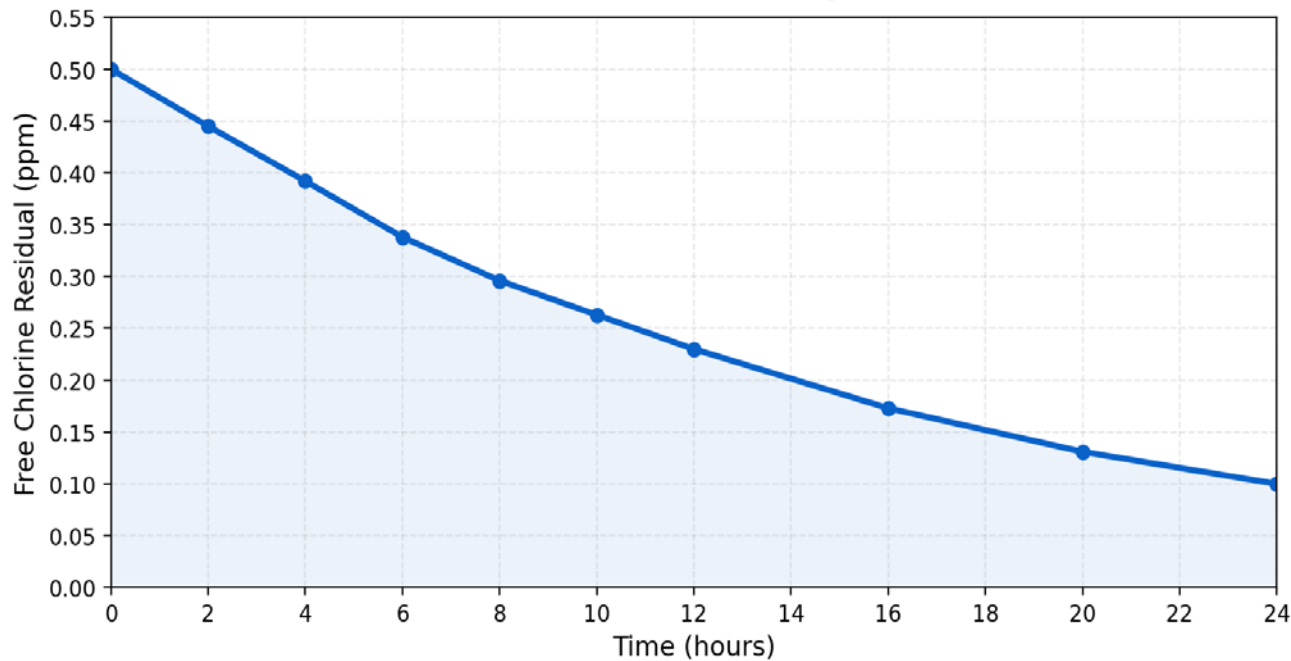
Engineered for safe submerged UV-C disinfection in potable water tanks.
Design alignment. Quality control. Reliable operation.

FREE CHLORINE DEPLETION UNDER UV-C

Illustrative trend for repeated 254 nm UV-C exposure with continuous recirculation

ILLUSTRATIVE TREND

Illustrative Free Chlorine Depletion in Water



DESIGN INTERPRETATION

- Starting residual: 0.5 ppm free chlorine
- UV-C exposure may gradually reduce chlorine residual during recirculation
- Actual depletion depends on water quality, organics, temperature and tank conditions

PRACTICAL BENEFIT

Candela UV supports continuous microbial control in stored water while reducing dependency on high chlorine residuals. This can improve taste and odor, lower chemical exposure, and may reduce chlorination by-products while maintaining safer water through UV-C disinfection.

Note: This is an illustrative trend and not a universal measured curve. Validate under actual water quality and operating conditions.

Lower chemical dependency. Cleaner taste. Safer stored water.

DIMENSIONS & SPECIFICATIONS

Engineered for performance, reliability and long life in demanding water environments

DIMENSIONAL ENVELOPE



TECHNICAL SPECIFICATIONS

1	Electrical power	75 W
2	Useful UV-C output	25 W
3	Wavelength	254 nm
4	Rated lamp life	9,000 hours
5	UV output at EOL	85%
6	Temperature range	-20 °C to 60 °C
7	Maximum depth	15 m

UV DOSAGE CALCULATION BASIS

Engineered around germicidal UV dose and repeated exposure

UV Dose = Effective UV Intensity × Exposure Time

CANDELA UV™ BASIS

- Lamp class: 75 W UV-C lamp
- Useful UV-C output: approx. 25 W
- Outer quartz tube: Ø40 mm
- Inner quartz tube: Ø30 mm
- Annular water gap: 5 mm
- Annular chamber volume: approx. 0.44 L
- Recommended villa flow: approx. 6–7 LPM
- Conservative design target: minimum 40 mJ/cm² per pass



PRACTICAL UV DOSE RANGE

Flow	Residence	Conservative	Practical clean-system
6 LPM	4.4 sec	≥44 mJ/cm²	55–95 mJ/cm²
6.6 LPM	4.0 sec	≥40 mJ/cm²	50–88 mJ/cm²
7 LPM	3.8 sec	≈38 mJ/cm²	48–84 mJ/cm²
8 LPM	3.3 sec	≈33 mJ/cm²	42–73 mJ/cm²

Recommended brochure statement

At the recommended villa operating flow of approximately 6 LPM, Candela UV™ provides a conservative calculated UV-C dose of at least 44 mJ/cm² per pass. Under clean-water, low-transmission-loss conditions, practical operating dose is expected to be higher.

Designed to exceed the minimum — engineered to perform in real tank conditions.

WATER QUALITY COMPATIBILITY

Mineral scaling and transmission control for reliable UV-C performance

CALCIUM CARBONATE (CaCO₃)

Up to ~200 ppm

Primary concern

Scaling on quartz sleeves can reduce UV intensity and dose delivery.

Recommended action

Use periodic cleaning; apply softening / anti-scale pretreatment where hardness is high.

Validate by site water test

IRON (Fe)

Target <0.3 mg/L

Primary concern

Iron reduces UV transmission and may stain or coat quartz surfaces.

Recommended action

Use iron removal / filtration where values exceed the target.

Validate by site water test

MAGNESIUM (Mg)

Up to ~50 ppm

Primary concern

Contributes to total hardness and can support mineral scaling over time.

Recommended action

Control hardness and schedule sleeve cleaning according to site water quality.

Validate by site water test

Guidance values shown are practical design references. Final treatment limits depend on actual water chemistry, UV transmittance, sleeve cleanliness, lamp condition and validation testing.

Control scale. Protect UV transmission. Maintain reliable disinfection performance.

Reference guide for selecting Candela UV™ units by storage volume

Design basis

Effective disinfection capacity: 400 L/hour per unit. Daily treatment capacity: 9,600 L/day per unit. Recommended sizing: 1 unit per 2,500 litres.

Tank Capacity (L)	US Gallons	Units	Disinfection Volume (L/day)	Passes/Day
500	132	1	9,600	19.20
1,000	264	1	9,600	9.60
1,500	396	1	9,600	6.40
2,000	528	1	9,600	4.80
2,500	660	1	9,600	3.84
5,000	1,321	2	19,200	3.84
7,500	1,981	3	28,800	3.84
10,000	2,642	4	38,400	3.84
15,000	3,963	6	57,600	3.84
20,000	5,283	8	76,800	3.84
25,000	6,604	10	96,000	3.84
30,000	7,925	12	115,200	3.84

For larger tanks, multiple units can be installed as modular UV-C treatment zones for wider hydraulic coverage and redundancy.

Simple sizing. Modular deployment. Reliable whole-tank recirculation.

CANDELA UV

Clean Water. Clean Tanks. Better Health.

A submerged UV-C platform for stored water disinfection across villas, commercial buildings, schools, hospitals, hospitality, wellness and agriculture.

Thank You

For discussion / dealership /
project study

Candela Research Centre Pvt. Ltd.
ISO 9001:2015 Certified Company
www.candelarc.com

CANDELATM
RESEARCH CENTRE