उत्पाद मानुयल
पराबैंगनी जल कीटाणुशोधन प्रणाली
IS 14724 : 1999 के अनुसार

PRODUCT MANUAL
FOR ULTRAVIOLET WATER DISINFECTION SYSTEM
ACCORDING TO IS 14724 : 1999

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरण के प्रचलन मे रीति और पारदर्शिता के सुसंगता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप मे उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	**उत्पाद** **Product**	:	IS 14724 : 1999
	शीर्षक **Title**	:	Ultraviolet Water Disinfection system
	संशोधन संख्या **No. of Amendments**	:	02
2.	**नमुनाकरण दिशा निर्देश** **Sampling Guidelines:**		
a)	**कच्चा माल** **Raw material**	:	Materials of Construction shall be as per Clause 5.4 of IS 14724.
b)	**समूहिकरण दिशा निर्देश** **Grouping guidelines**	:	NA
c)	**नमूने का परिमाण** **Sample Size**	:	1 water disinfection system unit
3.	**परीक्षण उपकरणो की सूची** **List of Test Equipment**	:	कृपया Annex-A देखें Please refer **ANNEX – A**
4.	**निरीक्षण व परीक्षण स्कीम**	:	कृपया Annex-B देखें

	Scheme of Inspection and Testing		Please refer **ANNEX – B**
5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day :**		
	i. Electrical Safety ii. Leakage Tightness iii. Max. Rate of Flow iv. Test for Turbidity v. Test for Suspended Particles		
6.	**लाइसेन्स का कार्यक्षेत्र /Scope of the Licence :**		
	IS 14724 : 1999 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है "Licence is granted to use Standard Mark as per IS 14724 : 1999 with the following scope:		
	उत्पाद का नाम Name of the product	UltraViolet Water Disinfection system	
	Power supply	Single phase/Three-phase, Frequency and working voltage	
	Rate of flow	As declared by the manufacturer on the unit as well as in the instruction manual.	

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ANNEX A

TO PRODUCT MANUAL
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ACCORDING TO IS 14724 : 1999

LIST OF TEST EQUIPMENT

Major test equipment required to test as per the Indian Standard

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Electrical Safety (Clause 5.3) IS 302	Selector switches, Ammeter, Voltmeter
2.	Leakage Tightness (Clause 6.1) IS 14724	Hydrostatic pressure equipment with pressure guage
3.	Max. Rate of Flow (Clause 6.2.1) IS 14724	Calibrated volumetric measure, Stop watch
4.	Test for Turbidity (Clause 6.2.2.1) IS 3025 (Part 10)	Turbidity meter, Turbidity free water, Hexamethylene tetramine solution, Hydrazine Sulphate solution, Turbidity standard suspensions, Sample tubes of colourless glass.
5.	Test for Suspended Particles (Clause 6.2.2.2) IS 14724	250 mL beaker
6.	Test for Microbiology (Clause 6.2.2.3) Annex A of IS 14724	Sacrina Lutea Standard Culture (MTCCI 2470), Nutrient agar/ Nutrient Broth, Gram's Iodine, Crystal violet solution, Safranin solution, Ethyl alcohol, Culture tubes/ petri-plates, Bacteriological Incubator (L. C. – 0.5℃), De-chlorinated sterile tap water, Turbidity meter, pH meter, Chlorine, Colony Counter, Thermometer (-10℃ to 110 ℃ Range and L.C. 0.5℃), Membrane Filtration Unit, Laminar Air Flow, 0.45 µ membrane filters, 250mL conical flasks.
7.	Test for Adsorption of Activated Carbon (Clause 6.2.2.4) IS 3025 (Parts 25 and 26)	50 litres of water containing 2ppm (Max.), Chlorine Spectrophotometer (wavelength range use of 420nm to 490nm and 625nm), Standard Chlorine solution, Glacial acetic acid, Potassium Iodide crystals, Standard sodium thio-sulphate (0.025N), Starch Indicator, Brown glass

		stoppered bottles, Magnetic stirrer assembly, Chlorinated distilled water, Conc. HCL, Mercuric chloride, Di-sodium salt of EDTA, O-Toluidine Di-hydrochloride, Di-potassium Hydrogen Phosphate, Potassium di-hydrogen phosphate, Di (2 ethyl hexyl) sulphosuccinate, Di-ethylene glycol mono-butyl ether, Refrigerator, Conc. Sulphuric Acid, Sodium Carbonate solution, Hypochlorite solution.

The above list is indicative only and may not be treated as exhaustive.

ANNEX B

SCHEME OF INSPECTION AND TESTING

FOR ULTRAVIOLET WATER DISINFECTION SYSTEM ACCORDING TO IS 14724 : 1999

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipments.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING AND MARKING – The Standard Mark, as given in the Schedule of the licence shall be marked on the name plate or stencilled on the body with indelible ink using a transfix label on each water disinfection system provided always that material to which this mark is thus applied conforms to every requirements of the specification and this scheme.

3.1 Marking – Information as given in clause 7 of the standard shall be marked clearly and permanently on each Ultraviolet water disinfection system. In addition, the following details shall be mentioned on each Ultraviolet water disinfection system:

a) BIS Licence No. CM/L--------.
b) BIS website details i.e. – "For details of BIS certification please visit www.bis.gov.in".

3.2 An instruction manual for the proper method of operation and use of the disinfection system shall be supplied along with the disinfection system. It shall also include the life and specification of UV lamp.

4. CONTROL UNIT – For the purpose of this scheme, all Ultra-Violet water disinfection system of the same capacity produced under similar condition of manufacturing in a week shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standard and is covered by the licence should be marked with Standard Mark.

5.2 On the basis of tests and analysis reports, the decision regarding conformity or otherwise of a control unit to a given requirement shall be made as follows:

5.2.1 Each control unit shall be individually tested to determine conformity. If one or more sample fail to meet any of the requirements specified in the standard, the material in the control unit represented by failed sample shall be rejected for the purpose of marking. After taking

corrective action, number of samples to be tested should be doubled for next two control units. If sample is found passing, the original frequency may be restored.

6. MATERIAL – Materials used for construction of water disinfection system shall be as per clause 5.4 of IS 14724. Routine analysis of each consignment of raw material and component received in the factory shall be carried out and appropriate records maintained. Materials which do not conform to the relevant Indian Standard shall not be used in the manufacturing of water disinfection system.

7. REJECTIONS – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016 and records be maintained.

TABLE 1
LEVELS OF CONTROL

(1)				(2)	(3)		
Test Details				**Test equipment requirement R: required (or) S: Sub-contracting permitted**	**Levels of Control**		
Cl.	**Requirement**	**Test Method Cl. Ref.**	**Test Method IS**		**No. of Sample(s)**	**Frequency**	**Remarks**
5.3	Electrical Safety	5.3	IS 14724 IS 302	R	3	Each Control Unit	See clause 5.2.1 of SIT
6.1	Leakage Tightness	6.1	IS 14724	R	2	-do-	
6.2.1	Max. Rate of Flow	6.2.1	IS 14724	R	-do-	-do-	
6.2.2.1	Test for Turbidity	6.2.2.1	IS 14724 IS 3025 (Part 10)	R	-do-	-do-	
6.2.2.2	Test for Suspended Particles	6.2.2.2	IS 14724	R	-do-	-do-	
6.2.2.3	Test for Microbiology	6.2.2.3 Annex A	IS 14724	R	1	-do-	In absence of in-house testing facilities, test may be carried out from BIS recognised OSL
6.2.2.4	Test for Adsorption of Activated Carbon	6.2.2.4	IS 14724 IS 3025 (Part 25)	R	-do-	-do-	-do-

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.