



# L'eau Claire

## Upflow Filters

**WATER TECHNOLOGIES**

# L'eau Claire upflow filters provide high quality filtration for industrial water treatment

The L'eau Claire upflow filter delivers water with a total suspended solids content that is virtually independent of influent concentrations. This cost-effective process does not use clarifiers, flocculation, sedimentation, dry chemicals or mixers.



## Operating Philosophy

L'eau Claire upflow deep bed media filters are designed for removal of fine suspended particles and colloidal material such as silica. The concept of upflow filtration offers the ability to have in-depth media loading, allowing three times the amount of solids loading as conventional downflow media filters.

Filters are vertical vessels designed for atmospheric or pressure operation. The lower inlet distributor is a plate with nozzles sized for uniform flow distribution. A primary media retention assembly is installed to prevent mixing of the coarse and fine media. Additionally, there is a secondary media retention grid to prevent the media from expanding during upflow filtration. The media bed consists of coarse gravel above the nozzle plate and then two layers of sand, coarse followed by fine sand, to give a 60-inch layer of filtration media.

Each filter is equipped with automated valves, controls, piping and air scour blowers/flush pumps for complete unattended operation. A chemical dosing system is installed to feed the proper dose of polymer and facilitate the adsorption of solids on the media surface. The filtration process consists of entrapment and adsorption created by a combination of chemical bonding, electrostatic forces or mutual adsorption.

## Benefits

- Installed Cost - Less than a conventional sedimentation basin and filter system
- Minimal levels of chemical feed lower operating costs
- Smaller footprint – 75% less space than conventional systems



# Technical Specifications

Vessel Dia. (ft.) (1)	Vessel Height (ft.)	Cross Sectional Area (sq. ft.)	Service Rate (GPM)	Flush Rate (GPM) (2)	Air Scour Rate (CFM) (3)	Vessel Shipping Weight (lbs.)	Media Weight (lbs.)	Vessel Operating Weight (lbs.)
4	13'10"	12	72	216	72	5,000	5,000	10,000
5	14'3"	20	120	360	120	6,500	13,000	19,500
6	14'3"	28	168	504	168	9,500	19,500	29,000
7	14'6"	38	228	684	228	10,500	25,000	35,500
8	14'10"	50	300	900	300	11,500	33,300	44,800
9	15'0"	63	378	1,134	378	14,500	41,000	55,500
10	15'3"	78	468	1,404	468	16,000	51,000	67,000
11	15'6"	95	570	1,710	570	17,500	61,500	79,000
12	16'3"	113	678	2,034	678	22,000	74,000	96,000
13	17'3"	133	798	2,394	798	26,000	88,000	114,000
14	17'10"	154	924	2,772	924	30,000	110,000	140,000
15	18'2"	176	1,056	3,168	1,056	36,000	125,000	161,000

The Leau Claire upflow deep bed media filter is available in a wide range of sizes. The above table shows a subset of the technical specifications, which will facilitate selection and planning for installation of a system.

Notes:

- (1) Vessel sizes smaller than 4 feet or larger than 15 feet can be custom-designed.
- (2) Water with specific gravity of 1.0 at 90 degrees F.
- (3) Air supplied at 12 psig.

## Typical Performance Results

The upflow filter will provide the following performance:

- A 98% removal of all 2 micron and greater particulate
- Effluent turbidity of less than 1.0 NTU's
- Colloidal Silica removal to less than 0.1 mg/l
- Color removal to less than 5 APHA units
- Total iron removal to less than 0.1 mg/l
- Suspended solids removal to less than 1.0 mg/l



