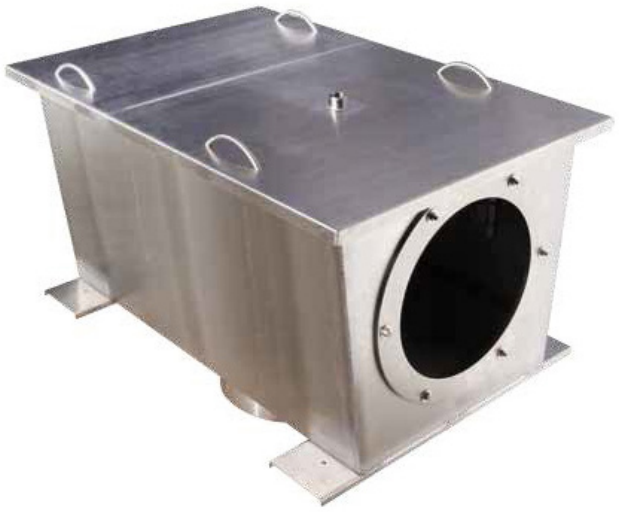
OPTIMAX FILTERS

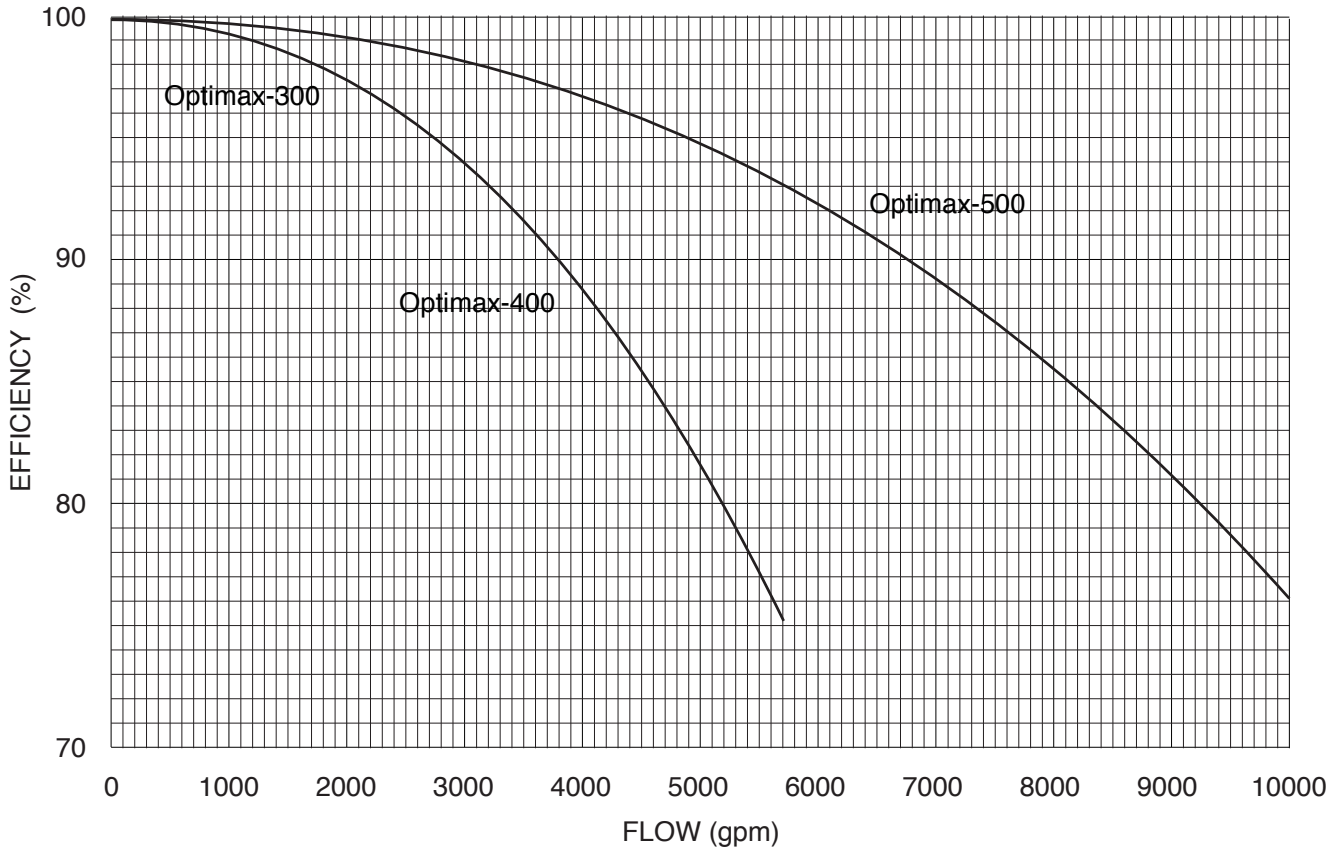
Optimax Filters are high-rate mechanical filters that extract particulates from rainwater collected from large commercial or industrial roofs before the water reaches a cistern. Rainwater enters through one end of the housing and flows onto a flat stainless-steel screen that traps all particles larger than 350 microns. Filtered water passing through the screen flows out through the bottom port; trapped particles are washed through a waste/overflow port opposite the inlet. For optimal efficiency, an internal spray system operated by the rainwater pumping and control system keeps the screen surface clean.



Optimax filters are made from heavy-gauge stainless steel in three sizes: *Optimax-300* with 12" ports for roofs up to 30,000 square feet *Optimax-400* with 16" ports for roofs up to 60,000 square feet and *Optimax-500* with 20" ports for roofs up to 100,000 square feet.

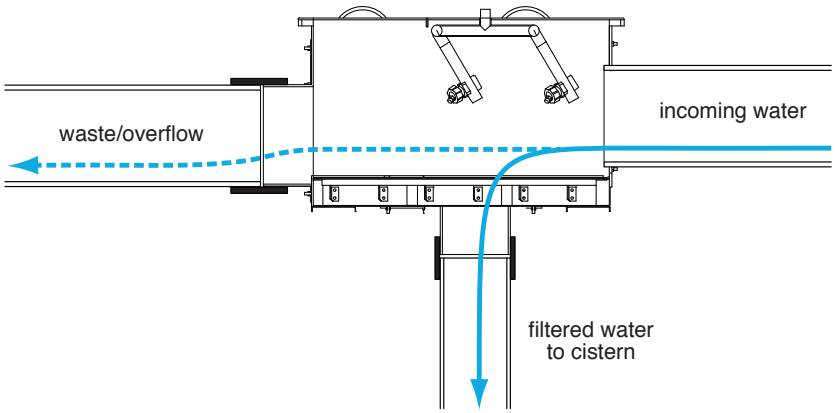
PERFORMANCE

The graph below shows the recovery efficiency at varying flow rates. Optimax filters extraordinarily efficient, providing more than 98% filtered water recovery in light rainfall, more than 95% recovery during moderate rainfall, and more than 90% recovery during intense rainfall. The Optimax 300 and Optimax 400 share the same filter body so they share the same performance curve, but the Optimax-300 can only operate at the far left of the curve due to hydraulic limitations of 12" pipe. Optimax-300/400 curve is based on test data; Optimax-500 curve is estimated.



OPERATION

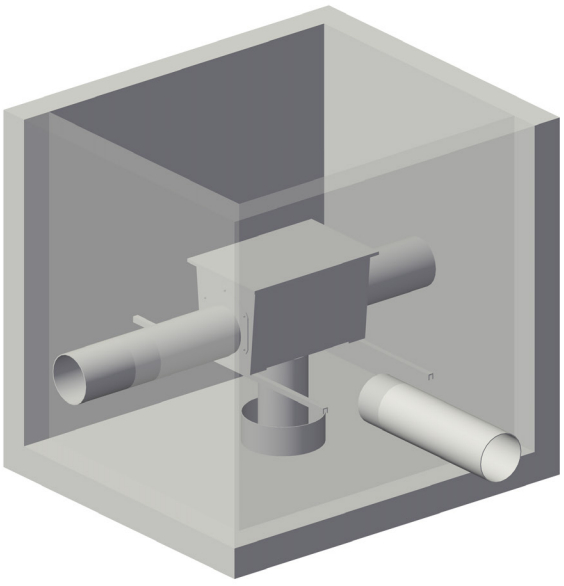
Sprayheads are mounted on the underside of one half of the Optimax lid. A flexible high-pressure hose is attached to the lid and connected to a solenoid valve fed by a rainwater system pump capable of delivering at least 20 gpm at 40 psi. Depending on the capabilites of the rainwater system controller, rinsing can be triggered by a timer or by rainwater flow. Nearly all of the rinse water is recaptured by passing through the screen.



INSTALLATION

For above-ground installation such as within the basement of a building, the inlet pipe is inserted through the gasketed inlet flange and the filtered water and waste pipes are attached to the outlet pipe collars using flexible rubber connectors as shown above. Since Optimax filters are not suitable for direct burial, when used underground they must be protected with a concrete or plastic vault. Although installation within a vault can be identical to above-ground installation, the invert differential between the inlet and clean water outlet can be problematic. This differential can be significantly reduced by installing the filter within a flooded vault as illustrated. The filtered water enters the vault via a diffuser at the bottom, then rises and overflows through a pipe penetrating the sidewall of the vault just below the screen level. This design can significantly improve water quality because fine solids that pass through the filter screen will settle to the bottom of the vault from where they can be periodically removed.

Optimax filter suspended in flooded concrete vault with inlet pipe at rear, waste/overflow pipe at left, and fitered water pipe at right. Diffuser at tank bottom prevents stirring sediment.



DIMENSIONS

Model	Pipe-P	Collar-C	Drop-D	Length-L	Width-W	Height-H	Area
Optimax-300	12”	6”	2”	40”	27”	24”	30,000 ft^2
Optimax-400	16”	6”	2”	40”	27”	24”	60,000 ft^2
Optimax-500	20”	8”	2”	62”	31”	28”	100,000 ft^2