

Impeller Upgrades for Improved Wastewater Treatment Plant Performance

LIGHTNIN has developed many of the mixing techniques considered standard in the Water and Wastewater Industry. Innovative research and testing in thousands of mixing applications continues to maximize process efficiency.

Through our efforts to advance mixing technology, LIGHTNIN is able to offer three impeller designs, which can dramatically improve low speed surface aeration performance. These impellers can improve oxygen transfer efficiency, provide proper mixing and insure mechanical reliability.

A240

A variation of the traditional pitch blade turbine uniquely suited for surface aeration.

The A240 operates in an "up pumping"

mode and the addition of a vertical wall enhances the aeration effect. Testing has shown an efficiency gain of up to 15% versus a PBT, thus providing cost savings by decreasing power consumption.



A245

An improvement on the A240.

The addition of a "splash guard" further improves aeration efficiency by channeling

water radially away from the impeller. This enhanced spray not only improves oxygen transfer rate but also reduces the splash. Testing has shown an efficiency improvement of up to 20%.



R335

A radial flow low liquid sensitive impeller designed to better accommodate process variations. It also has the added benefits

of low splash and lower torque requirements than pitch blade type designs. Testing has shown efficiency improvements of up to 25%.



LIGHTNIN is committed to improving your WWT applications by focusing on improvements in process efficiencies, mechanical reliability and reducing the total cost of ownership. No two installations are exactly the same nor are all the solutions the same. By offering three different designs, we can work with you to determine the best possible solution for your specific needs.

SPX Process Equipment

AFTERMARKET SERVICES

LIGHTNIN

CASE HISTORY

West Coast: Wastewater Treatment Facility

A large West Coast Wastewater Treatment Facility recently upgraded its aeration capacity. The original equipment in the aeration basins used conventional pitched blades turbines (LIGHTNIN A200 impellers). When it came time for the upgrade the concept of

the new generation of impellers (LIGHTNIN A245 impeller) was introduced and accepted. The existing aerators were designed to provide 9,400 lbs./hr at an applied power of 2,371 kW. The new design was able to provide 12,200 lbs./hr at an applied power of 2,695 kW.

This increased process capacity of 30% with a power increase of only 14%. Based on the number of units and an assumed cost of power of seven cents per kilowatt, this results in yearly savings of \$235k and \$4.7 million over a twenty-year life.

New Plant and Field Retrofits

Any of the new design impellers can be used for either new installation or retrofit of existing plant. The performance of existing units can be further enhanced by upgrades to the gearbox, upgrading to high efficiency motors and variable frequency drives.

LIGHTNIN - Factory Service Center Locations

Delavan, Wisconsin
Elko, Nevada
Modesto, California
Mulberry, Florida
Rochester, New York
Santa Fe, Texas
Wytheville, Virginia

LIGHTNIN - Authorized Service Center Locations

Baton Rouge, Louisiana
Concord, Ontario, Canada
East Hanover, New Jersey
Macon, Georgia

LIGHTNIN

An SPX Process Equipment Operation

135 Mt. Read Blvd.
Rochester, NY 14611 USA
Telephone: 585-436-5550
Fax: 585-436-5589

www.spxprocessequipment.com

The trademark LIGHTNIN is owned by SPX Corporation or its subsidiaries and is registered with the United States Patent Office.

B910-L0805