

Sustainable Design Product Data Sheet

Bradley ndite™ Photovoltaic Control Lavatory System

1. Product Name

Express® SS-Series and MG-Series Lavatory Systems with ndite™ technology

2. Manufacturer

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3. Product Description

ndite technology harnesses the energy of light to power the water- and electronic components in an energy-saving multi-station lavatory system. Photovoltaic cells embedded in a clear solid surface material on the top of the lavatory system's spray head shelf convert daylight or room light to energy. The cells provide power to a battery-free power storage and management system. This power is distributed to individual spray heads and to solenoids and valves that activate and regulate the flow of water.

4. Product Application

ndite technology is an optional component of Bradley 2- and 3-station lavatory systems that are specified for a wide variety of commercial and institutional facilities where vandal-resistance, reduced water consumption, reduced maintenance, and long fixture life cycles are desirable. **ndite** technology also enables the installation of sensor-controlled lavatory systems in settings with no available electrical power. Use of this innovative technology eliminates the need for running additional electrical lines and changing and disposing of batteries.

5. Materials & Components

Bradley multi-station lavatory systems using **ndite** technology consist of solid surface material lavatory

decks with integral bowls, backsplashes, and spray head shelves. Solid surface material is highly stain and chemical resistant, and is readily site repaired when scratched or damaged; it is virtually impermeable, enabling high levels of sanitation in the washroom using mild, environmentally-friendly cleaning agents. Each handwashing station has pre-set timed water delivery with auto-adapted sensors. Sensor logic precludes vandals' use of solid objects to cause spray heads to remain activated.

Multi-station lavatory systems have single supply and waste connections, reducing rough-in, materials and labor. Piping, solenoids, and valves are concealed behind an easily cleaned, tamper-resistant enclosure.

6. Sustainable Design Benefits

- Unit powered by daylight or room lights
- No batteries required, eliminating battery waste disposal throughout the fixture life cycle
- Spray heads, lavatory system materials and components are composed of long-life, vandal-resistant materials that are easily maintained and repaired
- Recommended maintenance materials maintain excellent sanitation with low microbial counts and without objectionable environmental chemical impact
- Metered spray heads provide maximum water and energy conservation



7. LEED™ Categories and Credits

Products are not certified under the US Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System. However, product selection may contribute to points under selected LEED categories and credits. Bradley Express Lavatory Systems with **ndite** technology may contribute to one or more of the following LEED credits:

EA Credit 1: Optimize Energy Performance (1-10 points)

Design Intent: Achieve increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

Requirements: Reduce design energy cost compared to the energy cost budget for energy systems regulated by ASHRAE/IESNA Standard 90.1-1999 (without amendments), as demonstrated by a whole building simulation using the Energy Cost Budget Method described in Section 11 of the Standard.

Service hot water is a regulated energy system. Reduction in energy usage by employing low-flow rate timed sensor spray heads plus **ndite** photovoltaic power will reduce electricity demand.

WE Credits 3.1/3.2: Water Use Reduction (1-2 points)

Design Intent: Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

Requirements: Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building (not including irrigation) after meeting the Energy Policy Act of 1992 fixture performance requirements.

Sensor spray heads provide accurate metering and timed shutoff for maximum water use efficiency. Sensor spray heads flow rate is preset to 0.5 GPM (0.032 L/s) at operating range of 20 to 80 psi (138 to 552 kPa). Metering and timed shutoff significantly reduce water use waste and its related energy costs.

ID Credit 1: Innovation in Design (1-4 points)

Design Intent: To provide projects the opportunity to be awarded points for exceptional performance above the requirements set by the LEED Green Building Rating System and/or innovative performance in Green Building categories not specifically addressed by the LEED Green Building Rating System.

Requirements: Identify the intent of the proposed innovation credit, the proposed requirements for compliance, proposed submittals to demonstrate

compliance, and the design approach (strategies) that might be used to meet the requirements.

Design Intent: Exceed existing credit requirements through synergy of innovative energy-saving photovoltaic application, plus elimination of disposable battery waste.

Bradley's **ndite** technology has been awarded recognition for innovative design for energy and water conservation by industry publications. Lav Systems featuring **ndite** use existing daylighting/ room lighting to reduce electricity usage, reduce rough-in and connection material requirements, and eliminate battery waste throughout the fixture's life. For example, a 40-facility school district with 6: 3-station units per building will eliminate 1,184 lbs of lithium batteries or 6,048 lbs of AA batteries over a 20-year fixture service life.

Design Intent: Exceed existing credit requirements for indoor chemical and pollutant source control.

Public washroom fixtures are a significant source of coliform and salmonella contamination (See Gerba, "Enteric Bacterial Contamination of Public Restrooms.") Bradley solid surface lavatory systems are designed for anti-microbial sanitary maintenance with biodegradable, non-toxic cleaning materials through the design of contoured corners with seamless, easily cleaned profiles and impermeable, renewable surfaces. Recessed spray heads and controls provide hands-free operation and an uninterrupted, easily cleaned lavatory deck. Bacterial effects on Bradley solid surface fixtures are evaluated through application of ASTM G 21.

8. Listings & Certifications

- Bradley lavatory systems with **ndite** technology are listed in the GreenSpec Directory
- Bradley solid surface materials are tested for compliance with listed industry standards by the NAHB Research Center.

9. Applicable Standards

- Lavatories: ANSI Z124.3 - Plastic Lavatories
- Spray Heads: ASME A112.18.1 - Plumbing Fixture Fittings
- Solid Surface Material: ANSI/ICPA SS-1-2001 Performance Standard for Solid Surface Materials
- G21-96 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

