HIGH-EFFICIENCY HYDRONIC ROOFTOP MAKE-UP AIR UNITS
What makes Xcelon stand out among other rooftop make-up air units lies in its design. Instead of relying on traditional clamshell or tubular heat exchangers, Xcelon is built with a high-efficiency condensing boiler paired with a hot water coil to transfer heat to the air stream. In addition, the Xcelon system uses a factory charged closed propylene glycol loop as an intermediary heat transfer medium, removing the need for a water connection to the unit.

As a hydronic technology, Xcelon utilizes water as a transfer medium due to its inherent ability to hold more energy than air. By using water, Xcelon is able to transfer the same amount of heat in a much smaller surface area than air-to-air heat exchangers.

Benefits of Hydronic Technology:
- Minimal footprint and maximum efficiency
- Maximum efficiencies are maintained at the widest range of ambient and design conditions
- Optimal user comfort is reached while reducing operating costs
- VAV minimum CFM is only limited by the supply fan
- No air stratification issues
- A green technology with reduced emissions and high-efficiency levels
THE NEXT GENERATION OF PERFORMANCE

Specifically designed to be the most energy-efficient rooftop make-up air unit available today, Xcelon uses ultra high-efficiency, condensing boilers in a hydronic, self-contained system that does not require any external water supply source. Its fully modulating, 10:1 turndown configuration allows for precision temperature control to ensure constant discharge air temperatures, even during the lowest part-load conditions. The result is less cycling, improved reliability and very accurate temperature distribution across the air stream, ultimately reducing operating costs while creating uniform comfort levels across the occupied space.

ENERGY RECOVERY EQUALS ENERGY EFFICIENCY

While typical commercial units only maintain efficiency levels around 80%, Xcelon outperforms the competition with 93% standard operational efficiencies and maximum efficiencies of 98% when the discharge air temperature is set to 70°F. In order to maintain such high levels of efficiency, Xcelon also features a unique heat loss recovery system to recover wasted heat from the Variable Frequency Drive (VFD), circulator pumps, fan motor and boilers – maximizing energy utilization and boosting efficiency levels even more.

With a proprietary HRT control platform for sophisticated yet user-friendly operation, Xcelon furthers its efficient design through the use of a VFD to control fan speed performance for part load conditions. Xcelon’s VFD enclosure includes a microprocessor control board with integral electric heater and cooling fan, ensuring consistent temperatures and premium VFD performance at temperatures reaching -30°F. In addition, Xcelon’s high-efficiency cooling platform operates through an interlaced two-circuit, four- or six-row cooling coil with four scroll compressors (4:1 turndown).
Savings based on the following conditions: 24-hours, 7-days-per-week operation; ambient temperature less than 65°F; Discharge air temperature setpoint of 72°F; 10,000 CFM; $1.1 per therm; Xcelon compared to a 77% average gas efficiency unit of equal size with modulating gas.

**Operating costs based on data collected in Portland, Maine.**
In today’s commercial HVAC industry, efficiency is everything. Xcelon is the only rooftop make-up air unit available today that fuses innovative hydronic, condensing boiler technology with advanced air distribution and energy recovery methods for unparalleled levels of efficiency up to 98%.

Conceptualized and developed by Sterling, well-regarded throughout the industry as a leader in HVAC innovation, Xcelon’s unique combination of condensing boiler technology and air distribution, in addition to its self-contained, hydronic design and integrated control platform, produce maximum operating efficiencies that far surpass industry standards and expectations.

Key Features:
- Up to 98% efficient by utilizing a high-efficiency hydronic condensing boiler
- 800 & 1,200 MBH heating capacity
- 4,501 – 10,000 CFM airflow
- Factory charged propylene glycol loop – no external water connection required
- +/-1°F temperature accuracy
- BMS communication – Modbus standard, LonWorks and BACnet optional
- Integral spring isolators for vibration control and quiet operation
- Designed for 100% outside air, optional return air and a variety of economizer controls
- Exclusive heat loss recovery system
- Fully modulating gas valve and VFD
- Service and installation friendly

Optional Features:
- 4 or 6 Row DX cooling coil
- Built-in condensate trap and neutralization system