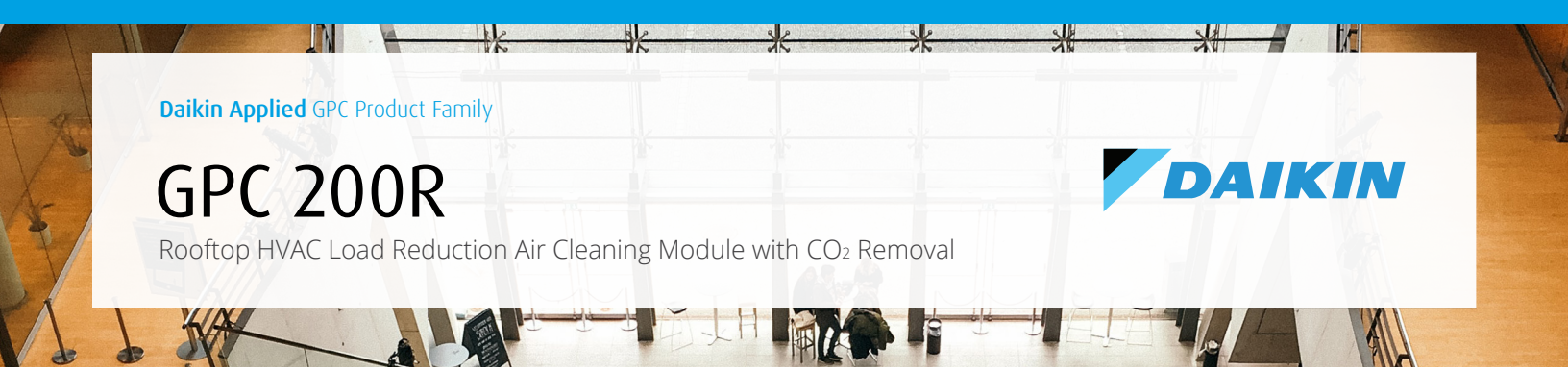


Daikin Applied GPC Product Family

GPC 200R

Rooftop HVAC Load Reduction Air Cleaning Module with CO_2 Removal

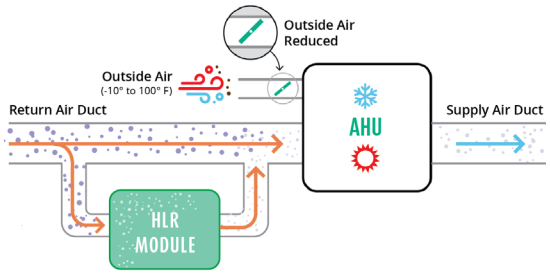
Improved Air Quality, Lower HVAC Costs

The GPC 200R is Daikin Applied's award-winning air cleaning product that removes CO_2 and contaminants of concern from indoor air so that it can be safely recirculated. This solution reduces first costs for new construction and lowers operating costs for all HVAC systems, lowers a building's carbon footprint, and improves indoor air quality while also generating LEED and WELL building credits. Indoor air quality is improved by removing indoor-generated contaminants and reducing the intake of outdoor pollutants. The GPC 200R solution is compliant under ASHRAE 62.1 and IMC 403.2. The GPC 200R module is designed for outdoor use, typically on a rooftop. The GPC 200M module (not shown) is a model designed for indoor installations.

GPC 200R Module

IMPROVE AIR QUALITY | SAVE ENERGY | REDUCE COSTS | REMOVE CO_2 | REDUCE CARBON | EARN LEED/WELL POINTS | NO BYPRODUCTS

Ventilation and Scrubbing



Outside airflow can be reduced using ASHRAE Standard 62.1 IAQP[1] calculations.

[1]The mass balance analysis is performed per contaminant and per zone to ensure all contaminants are properly maintained below their established limits. These "per zone" outside air CFMs are summed to yield the total ventilation required for the building.

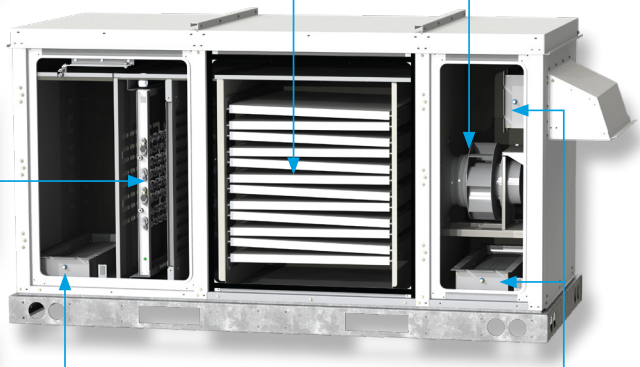
How it Works

Indoor Air Scrubbing – One or more GPC 200R modules can be installed on the return air side of an air handling unit (AHU). Air is drawn into the 200R by internal fans, which blow the air through sorbent filters that capture and remove carbon dioxide (CO_2) and contaminants of concern from the air stream. Without producing any byproducts, the GPC 200R then blows clean air back into the return.

Automatic Self-Cleaning – The sorbents are designed to release captured contaminants upon heating. The 200R module is equipped with a built-in heater and performs a periodic regeneration process to clean the sorbents and expel contaminants outside the building. Regeneration is managed for optimal performance and minimal energy use.

Outside Air Intake Reduction – By cleaning recirculated air, outside air ventilation rates can be safely reduced by up to 85%, and new HVAC equipment can be downsized, using the ASHRAE Standard 62.1 IAQ Procedure.

What's Inside the GPC 200R Module?



Broadly Applicable

The 200R is ideally suited to integrate with custom and semi-custom airside systems, including systems with dedicated outside air systems (DOAS) and energy recovery ventilation (ERV) components, in office buildings, schools, and other commercial buildings.

- Office Spac
- Higher Education
- K-12 Schools
- Light Commercial

Proven, Award Winning GPC Technology®

Hundreds of GPC modules have been specified and installed around the world by leading consulting engineers and HVAC contractors. Air cleaning efficiency has been validated by ASHRAE 145.2 testing, and energy savings have been field validated by multiple utilities who have provided incentives for installing GPC modules as well as by the U.S. Department of Energy. Unlike many other air cleaning technologies, independent lab tests show that GPC modules do not produce any byproducts. In 2019, GPC technology received the AHR Expo Product of the Year Award, the most prestigious award for an HVAC product.

AHR EXPO INNOVATION AWARDS 2019 PRODUCT OF THE YEAR

200R Module Specifications – Preliminary

GENERAL SPECIFICATIONS

Installation	Insulated curb or above roof on equipment support
Construction	Double-wall, insulated, powder-coated galvanized steel
Sorbent Filters per Set	12
Typical Airflow (Adsorption)	1,000 CFM* 1,700 CMH
Typical Airflow (Regeneration)	600 CFM* 1,020 CMH
Static Pressure Increase to AHU Fan	None
Sound Level	68 dBA
Maximum Allowed External Static Pressure	0.6" wc / 150 Pa - Adsorption 1.5" wc / 370 Pa - Regeneration
Entering Air Conditions, Adsorption & Regeneration	Non-condensing, ≤30°C (86°F), ≤65% RH, ≤18°C (64°F) dew point
Maintenance	Two-year Filter Replacement
Operating Life	20+ years with scheduled maintenance

*CFM was measured at 0ft elevation and 70 degrees Fahrenheit

COMMUNICATIONS

BMS Integration	BACnet IP with BTL, BACnet MS/TP (optional)*
Security	FIPS 140-2 compliant (2002 standard)

*RS485 to USB converter required

SYSTEM POWER RATINGS (Three Phase)

Voltage (VAC)	Frequency (Hz)	MCA	MOCP
480 V	50/60 Hz	19.6 A	20 A
400 V	50/60 Hz	23.2 A	25 A

SYSTEM POWER CONSUMPTION

Adsorption Mode	1 kW
Regeneration Mode	13 kW

DIGITAL INPUT (On/Off Signal)

Fire Alarm	Safety Stop for GPC Module
Regen OK	Permits Regen As Scheduled
Scrub Enable	Permits Adsorption When AHU Is On

DIGITAL OUTPUT (On/Off Signal)

Exhaust Fan Start/Stop	Controls External Exhaust Fan
Aux Scrub Fan Start/Stop	Controls External Booster Fan
Unit Status	Signals Module On / Off State
Unit Alarm	Signals Normal Or Alarm State

WEIGHTS

Module Shipping Weight	925 lbs	420 kg
Filter Shipping Weight	200 lbs	91 kg
Installation (Module Only)	865 lbs	392 kg
Operating (With Filters)	1,045 lbs	474 kg

DIMENSIONS (Front View)

Height (Including Rail)	43.5" / 1,105 mm
Width (Includes Exhaust Hood)	87" / 2,197 mm
Depth (Allow Additional 36" / 914 mm on the front and 24" / 610 mm on the back for service)	36.8" / 945 mm
Ducts (Indoor Air Inlet and Clean Air Outlet)	6.4" x 22.8" / 162mm x 579mm

CERTIFICATIONS

GPC Module Safety	UL 1995:2015 Ed.5 CSA C22.2#236:2015 Ed.5
Filter Bank and Filters	UL 900:2015 Ed.8
Air Cleaning Efficiency	ASHRAE 145.2

ASHRAE Standard Compliance

Standard 62.1 for Ventilation & Acceptable Indoor Air Quality
All of Daikin Applied's GPC products are fully compliant under ASHRAE Standard 62.1. By using ASHRAE's performance-based Indoor Air Quality Procedure (IAQP) rather than the prescriptive Ventilation Rate Procedure (VRP), engineers can calculate a minimum ventilation rate that optimizes indoor air quality and energy efficiency. Introduced in 1981, IAQP determines outdoor air intake rates based on an analysis of contaminant sources and air cleaning capacity to stay below recommended contaminant concentration limits.

Standard 145.2 for Assessing the Performance of Gas-Phase Air Cleaning Systems
GPC technology is one of the only air cleaning technologies to have undergone independent lab tests for cleaning efficiency using ASHRAE Standard 145.2. Independent labs have conducted ASHRAE 145.2 single-pass efficiency testing for all the contaminants of concern required to maintain acceptable indoor air quality in buildings.

Daikin Applied's award-winning Gas Phase Air Cleaning Technology reduces the cost and carbon emissions of heating, ventilating, and air conditioning commercial buildings and increases their resiliency to polluted outside air. Gas Phase Air Cleaning Technology delivers these benefits by filtering harmful contaminants from indoor air so that indoor air quality can be maintained with less outside air ventilation, which is energy intensive and expensive to condition and may be polluted. Reducing outside air requirements enables building owners to install smaller, less expensive HVAC systems that use less energy and to operate existing HVAC systems more energy efficiently. Gas Phase Air Cleaning Technology can also be used to earn LEED and WELL points. For more information, please visit daikinapplied.com.