April 2021

REZNOR®

Trusted Heating Solutions

PHOTON

Suspended Gas Fired Unit Heaters

ErP 2021

ErP Lot 21
Seasonal Efficiency and
NOx compliant

NORTEK™
GLOBAL HVAC

PHOTON

Room Sealed Unit Heaters

The PHOTON series is a range of gas fired unit heaters designed to deliver outstanding energy efficiency, performance and economy for reduced operating and life cycle costs.

Reliable operation and simple servicing further reduce operating costs whilst the extended operational life of the heat exchanger ensures that the units provide the lowest long term cost benefits.

Model Range

PHOTON - Standard units are fitted with a high airflow axial fan for free-blowing applications, with ten model heat outputs ranging from 10–120 kW.

PHOTON-B units (coming soon) are fitted with a direct drive centrifugal fan for ducted applications, with four heat outputs ranging from 25–65 kW.

A modulating burner is fitted as standard to each model, which requires a 0 to 10v DC signal to operate.

All units are available for natural gas (G20, G25, G25.3) as standard
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Applications

- Automotive workshops
- Factories
- Retail outlets
- Sports arenas and halls
- Warehouses
- Workshops

Features & benefits

- Photon and Photon-B units incorporate 4-pass heat exchanger technology for optimum efficiency and enhanced life expectancy
- Single burner with multi-try ignition provides enhanced reliability
- A fully pre-mixed blown gas modulating burner is fitted as standard. Requires a 0 to 10V DC signal to operate
- Photon-B centrifugal fan option available for ducted applications (coming soon)
- High efficiency
- Reduced energy bills
- Versatile flue options for ease of siting
- Wide range of applications

Installation - Units must be installed, commissioned and operated fully in accordance with all applicable relevant standards and codes of practice, the requirements of the local authority and/or fire officer, insurers and the details provided in the installation manual.

Position and Location - Four integral suspension points complete with an M10 female thread are provided to each heater. Units must not be installed in atmospheres containing flammable or explosive vapours,combustible dust, halogenated hydrocarbons, chlorinated vapours or where contaminants may affect electrical motors or connections.

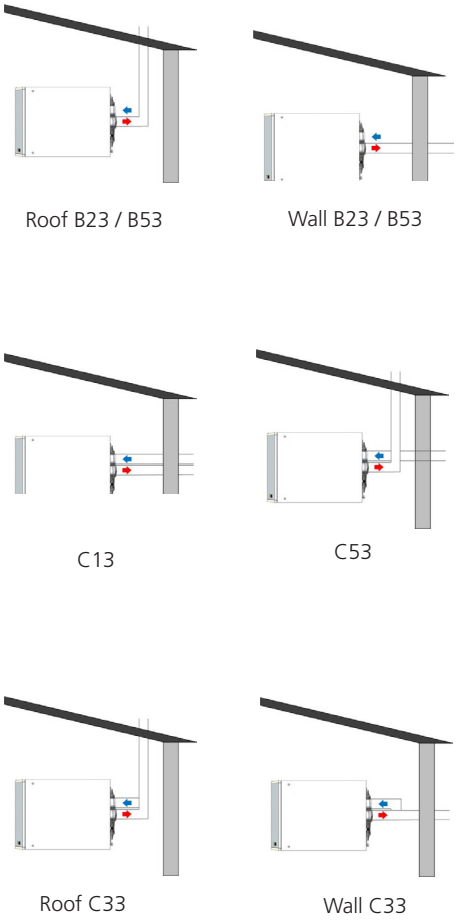
Flueing - The products of combustion from the unit must be flued to the outside of the building. Units have a blown burner and can be installed in either room sealed or flue only applications classified as B23, B53, C13, C33 and C53 under PD CR 1749 "Classification of gas appliances according to the method of supplying combustion air and of evacuation of the combustion products (types)". Consideration must be given to the provision of air for combustion and ventilation.

Electrical - Units are suitable for a single phase electrical supply and must be installed by a suitably qualified electrician to meet the requirements of the current IET Regulations. The supply should not be isolated except for maintenance purposes.

Gas Pipework - A flexible connection, isolating valves and unions should be provided for each heater. Pipework must be installed in accordance with the relevant standards and codes of practice.

Duct Installation - Photon-B units (coming soon) are designed for use in a ducted installation.

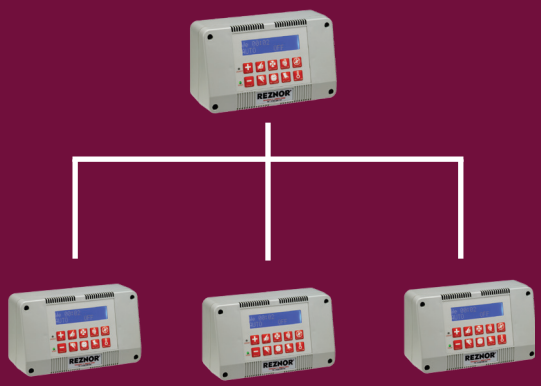
Warranty - Photon and Photon-B units are provided with a two year parts and one year labour warranty.



Diagrams showing typical flue arrangements

Optimised Control

SmartCom MZ panel allows up to
16 panels to be linked for centralised control



To complement the PHOTON series a SmartCom control panel is available, offering:-

- Self adapting optimum start and stop
- Simple user friendly programming
- Individual seven day programming
- Day, night and frost (5˚C) temperature settings
- Modulating burner control
- Three on/off periods per day
- Easy set overtime and holiday periods Remote burner reset facility
- Password protection to prevent unauthorised adjustment
- Hours run and service data logging
- Battery back up in the event of mains failure

Specification

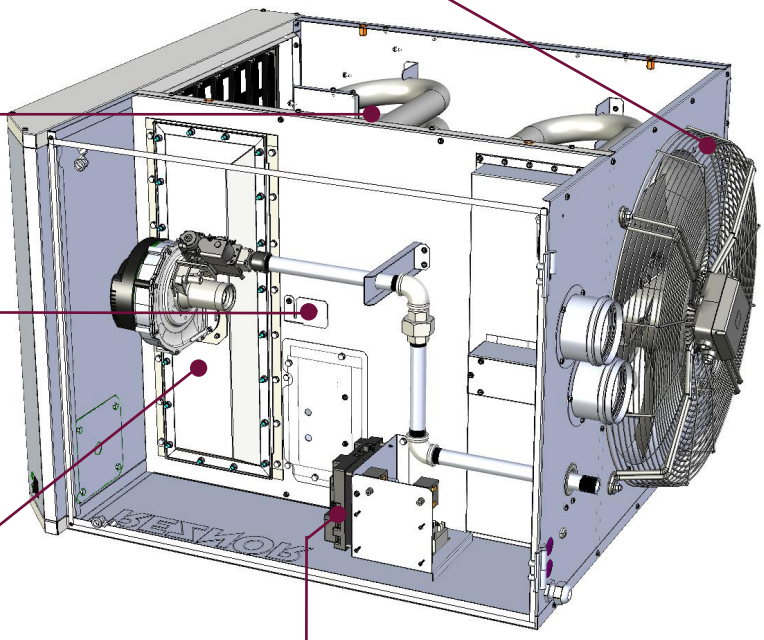
Heat Exchanger

Manufactured from aluminised steel, the heat exchanger is of the 4 pass type which provides a high thermal efficiency combined with an enhanced life expectancy.

Increased Airflow

A high capacity axial flow fan is fitted to Photon units for improved air throw and reduced stratification. Photon-B models (coming soon) are fitted with a direct drive centrifugal fan.

The fan operation is controlled by an integral controller which delays the fan start up until the heat exchanger has reached operating temperature and continues to run the fan after the burner has switched off until all useful heat has been dissipated.



Dual Limit Stats

Dual limit stats provide additional safety and reliability.

Burner

Advanced burner technology utilises a fully pre-mixed blown burner, with multi-try ignition for optimum reliability and ease of maintenance.

Burner modulation is fitted as standard and will require a 0 to 10V DC signal in order to operate.

Enhanced Reliability and Safety

A microprocessor burner control provides full safety monitoring and multi-try ignition control for enhanced reliability.

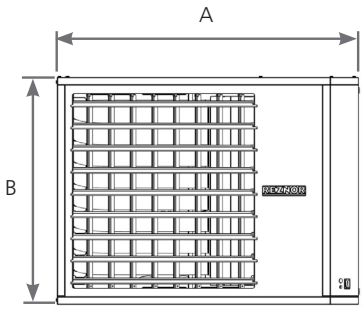
Limit stats monitor the operating temperature within the heater unit and shut down the burner in the event of overheating. For additional safety all models are fitted with dual limit stats.

Technical Data

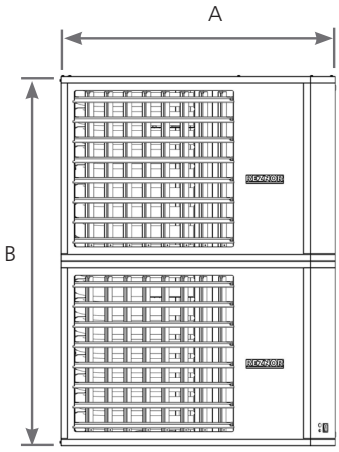
Model	PHOTON	10	20	25	35	45	55	65	70	100	120
Combustion Air and Flue Type [1]		B23 / B53 / C13 / C33 / C53									
Heat Output High Fire [2]	kW	9.34	18.39	26.54	31.68	42.24	53.46	63.59	71.25	97.87	120.16
Gas Consumption High Fire (HS) G20 [3]	m^3/h	1.07	2.14	3.08	3.69	4.91	6.17	7.37	8.19	11.33	13.71
Gas Consumption High Fire (HS) G25 [3]	m^3/h	1.25	2.49	3.59	4.30	5.71	7.17	8.57	9.52	13.18	15.94
Gas Consumption High Fire (HS) G25.3 [3]	m^3/h	1.22	2.44	3.51	4.20	5.59	7.02	8.39	9.32	12.89	15.60
Gas Connection [4]	BSP	½"			¾"						1"
Airflow	m^3/h	1223	2533	3035	4120	4562	5877	7125	8681	10350	17552
Horizontal Throw	m	10	16	26	27	26	32	32	36	36	36
Noise Level [5]	dBA	46	48	49	51	51	51	56	59	60	62
Minimum mounting height	m	2.5									
Recommended mounting height [6]	m	3.0		4.0						4.0 - 5.0	
Total Electrical Rating	W	145	150	256	550	550	690	820	1000	1040	1900
Electrical Connection		230V / 1N / 50Hz									
Protection Grade	IP	IP20									
Net weight	Kg	43	63	58	89	99	121	122	135	168	258

1. Gas appliance classifications for approved venting methods are based on BS EN 1749:2020
2. Refers to net calorific value of fuel
3. Natural gas: G20 Hs 37.78 MJ/m³, G25 Hs 32.49 MJ/m³, G25.3 Hs 33.2 MJ/m³ @ 15°C and 1013.25 mbar
4. There is a difference between the gas connection diameter and the diameter of the supply line. Always use the most adequate diameter of the supply line to minimize the pressure drop through the gas pipes. If necessary, reduce the diameter of the supply line at the inlet of the unit
5. Sound pressure measured in dB(A) : at 5m distance of the heater with A=160m² & Q=2
6. Height from floor to bottom surface of heater. This is the recommended mounting height. Positioning of unit heaters for proper performance is application dependent. Operation is affected by other air moving equipment in the space, obstructions to the airflow, draughts and/or close proximity to doors or windows, etc. Care should be taken to avoid mounting the heaters higher than these recommendations, unless downturn nozzle options are used, as significant stratification may occur resulting in poor floor coverage and higher energy losses through the roof structure. Isothermal conditions +/-20°C ambient air temperature, discharge louvres zero deflection, v = 0.5m/s. The air throw will be influenced by the height of the building, mounting height of the unit, ambient temperature & adjustment of the louvres

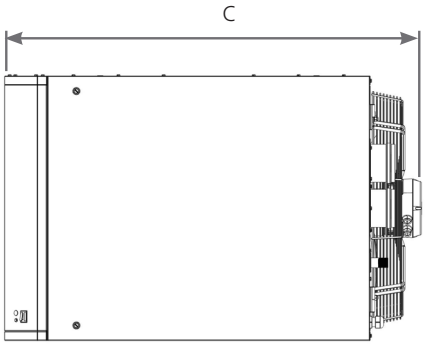
Dimensions



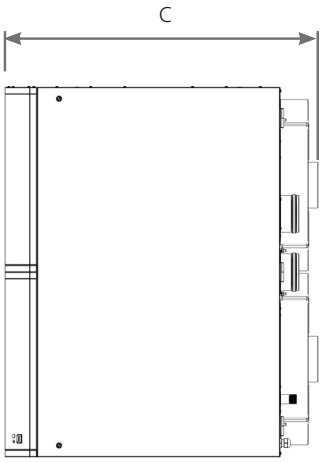
Front View Photon 10-100



Front View Photon 120

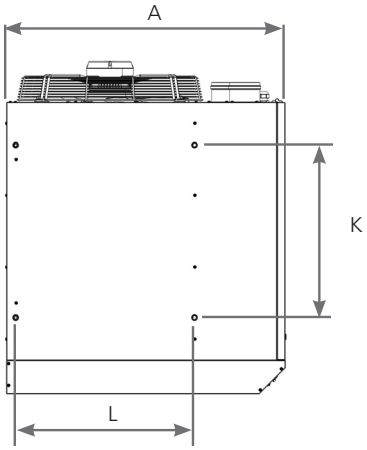


Side View Photon 10-100

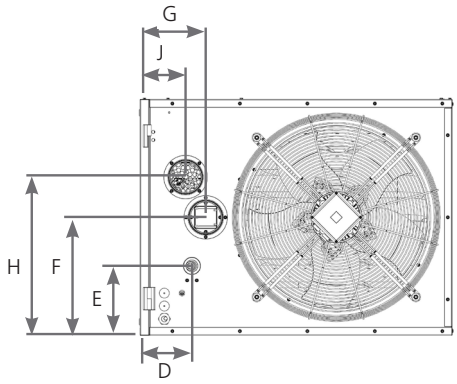


Side View Photon 120

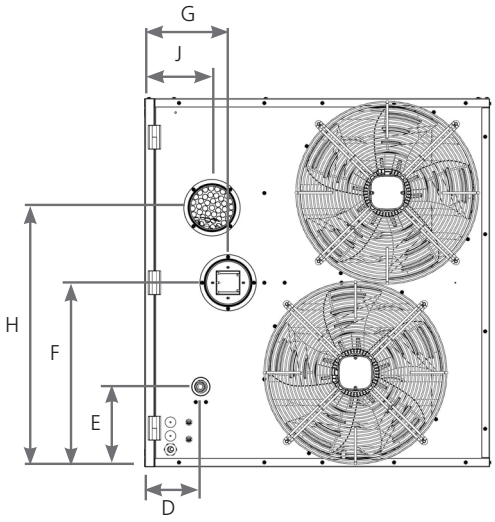
Dimensions											
Model	**PHOTON**	**10**	**20**	**25**	**35**	**45**	**55**	**65**	**70**	**100**	**120**
Unit Width A	mm	700	700	970	970	970	970	970	970	1010	1010
Unit Height B	mm	380	660	520	520	520	733	733	800	1080	1360
Overall Length C	mm	810	840	1160	1180	1180	1156	1190	1153	1140	1153
Side to Gas Connection Centre D	mm	76	99	188	181	181	162	162	162	165	213
Bottom to Gas Connection Centre E	mm	198	257	123	134	134	215	215	234	234	105
Side to Flue Connection Centre F	mm	109	109	142	142	142	145	145	145	200	155
Bottom to Flue Connection Centre G	mm	292	431	385	385	385	510	581	617	759	894
Side to Air Inlet Centre H	mm	185	185	205	205	205	205	205	205	245	245
Bottom to Air Inlet Centre J	mm	186	342	260	260	260	367	367	400	540	680
Top Suspension Centres K	mm	413	413	623	623	623	623	623	623	623	623
Top Suspension Centres L	mm	350	350	600	600	600	600	600	600	600	600



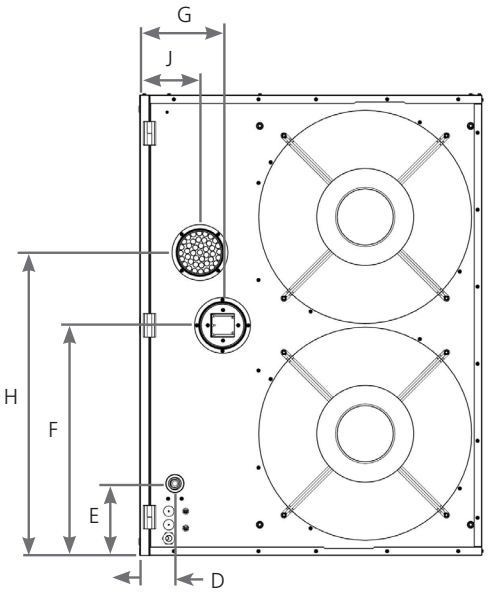
Plan View Photon 10-120



Rear View Photon 10-70



Rear View Photon 100



Rear View Photon 120

Connection Sizes											
Model	**PHOTON**	**10**	**20**	**25**	**35**	**45**	**55**	**65**	**70**	**100**	**120**
Gas connection diameter	BSP	½"			¾"						1"
Combustion air inlet diameter	mm	80			100			130			
Flue diameter	mm	80			100			130			
Maximum Flue Length	m	9.5									

Clearance Distances											
Model	**PHOTON**	**10**	**20**	**25**	**35**	**45**	**55**	**65**	**70**	**100**	**120**
Top clearance	mm	50	50	50	100	100	100	100	100	100	100
Rear clearance	mm	450	450	450	450	450	450	450	450	450	450
Bottom clearance *	mm	50	50	50	100	100	100	100	100	100	100
Side clearance	mm	50	50	50	100	100	100	100	100	100	100
Service panel clearance	mm	850	850	850	850	850	850	850	850	850	850

* Heaters can be base mounted on suitable non combustible supports.

A minimum 150mm clearance distance MUST be maintained at all points around the entire flue system.

Other products in the Reznor range:-

- Condensing warm air heaters
- Radiant heating
- Air curtains
- Destratification fans
- Heating & ventilation units
- Packaged rooftop units
- Air induction systems
- Gas fired heater modules
- Evaporative cooling

GB/REZ/PHOTON/001/0421

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