

# REZNOR®

## Trusted Heating Solutions

### PHOTON

Suspended Gas Fired Unit Heaters



ErP Lot 21  
Seasonal Efficiency and  
NOx compliant

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

### Applications

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

## Features & benefits

- Photon 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
- 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.

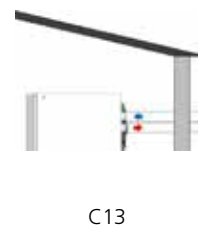
**Position and Location** - Four integral suspension points complete with an M10 female thread are provided to each heater. Units must not be installed in atmospheres containing flammable or explosive vapours, combustible dust, halogenated hydrocarbons, chlorinated vapours or where contaminants may affect 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 and C33 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.

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

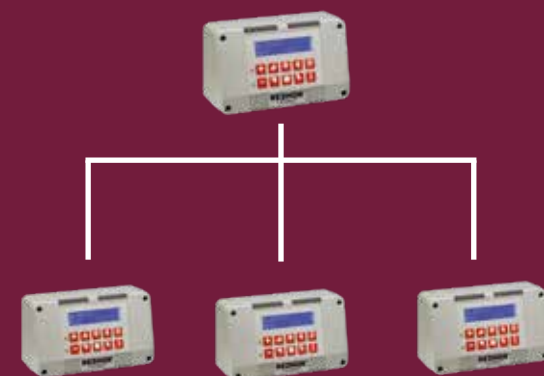


Diagrams showing typical flue arrangements

## 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. 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

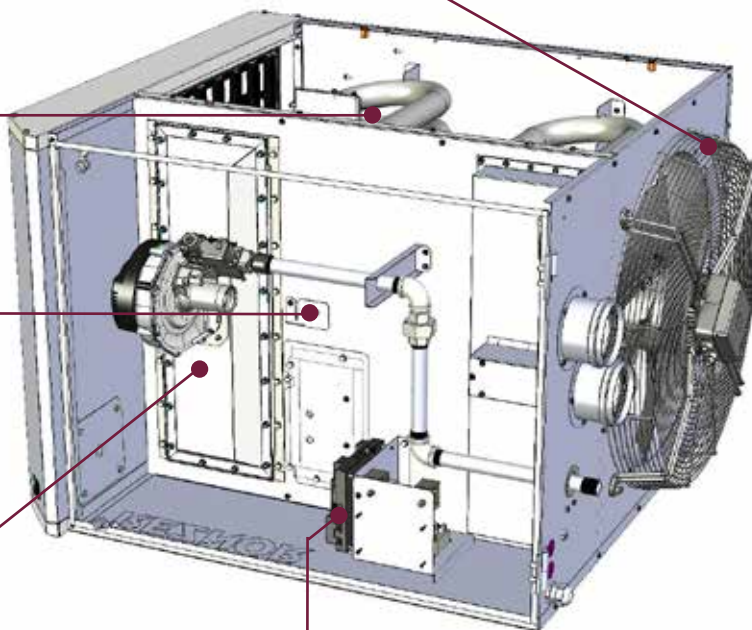
Advanced burner technology utilises a fully pre-mixed blown burner, with multi-try ignition for optimum reliability and ease of maintenance.

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 <sup>1</sup>		B23 / B53 / C13 / C33									
Heat Output High Fire <sup>2</sup>	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 <sup>3</sup>	m <sup>3</sup> /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 <sup>3</sup>	m <sup>3</sup> /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 <sup>3</sup>	m <sup>3</sup> /h	1.22	2.44	3.51	4.20	5.59	7.02	8.39	9.32	12.89	15.60
Gas Connection <sup>4</sup>	BSP	½"				¾"					1"
Airflow	m <sup>3</sup> /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 <sup>5</sup>	dBA	46	48	49	51	51	51	56	59	60	62
Minimum mounting height	m	2.5									
Recommended mounting height <sup>6</sup>	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

<sup>1.</sup> Gas appliance classifications for approved venting methods are based on BS EN 1749:2020

<sup>2.</sup> Refers to net calorific value of fuel

<sup>3.</sup> Natural gas: G20 Hs 37.78 MJ/m<sup>3</sup>, G25 Hs 32.49 MJ/m<sup>3</sup>, G25.3 Hs 33.2 MJ/m<sup>3</sup> @ 15°C and 1013.25 mbar

<sup>4.</sup> 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

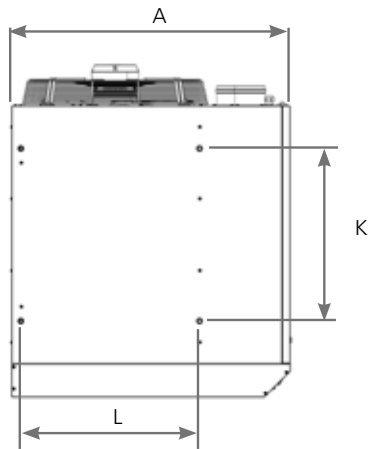
<sup>5.</sup> Sound pressure measured in dB(A) : at 5m distance of the heater with A=160m<sup>2</sup> & Q=2

<sup>6.</sup> 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

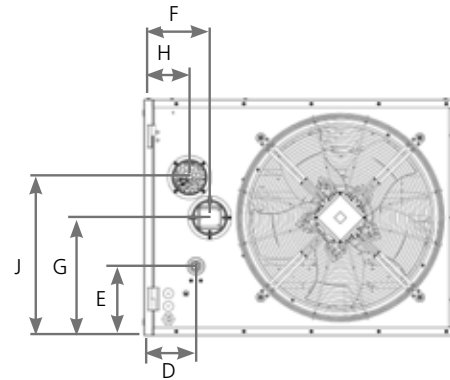
The image contains four technical drawings of Photon units, arranged in a 2x2 grid. The top row shows front views, and the bottom row shows side views.

- Top Left: Front View Photon 10-100**
  - Shows a single unit with a grid of 10 columns and 10 rows of ports.
  - Dimension **A** indicates the width of the unit.
  - Dimension **B** indicates the height of the unit.
- Top Right: Front View Photon 120**
  - Shows a unit with two stacked sections, each containing a grid of 10 columns and 10 rows of ports.
  - Dimension **A** indicates the width of the unit.
  - Dimension **B** indicates the total height of the unit.
- Bottom Left: Side View Photon 10-100**
  - Shows the side profile of the Photon 10-100 unit.
  - Dimension **C** indicates the depth of the unit.
- Bottom Right: Side View Photon 120**
  - Shows the side profile of the Photon 120 unit.
  - Dimension **C** indicates the depth of the unit.

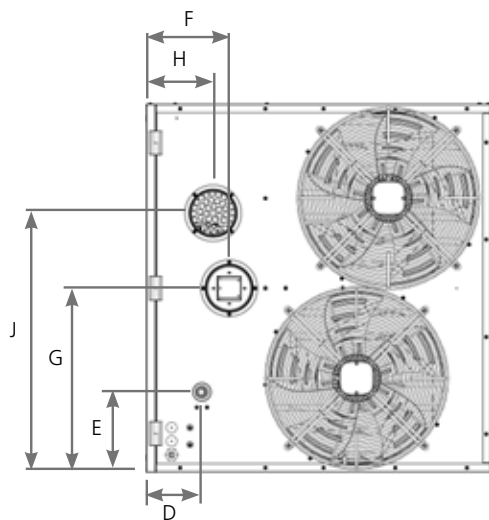
Dimensions											
Model	PHOTON	10	20	25	35	45	55	65	70	100	120
Unit Width A	mm	700	700	970	970	970	970	970	970	1010	1010
Unit Height B	mm	380	660	520	520	520	733	733	800	1080	1360
Overall Length C	mm	810	840	1160	1180	1180	1160	1190	1160	1140	1160
Side to Gas Connection Centre D	mm	73	96	180	174	179	158	154	154	163	101
Bottom to Gas Connection Centre E	mm	198	257	124	134	134	215	215	224	236	213
Side to Flue Connection Centre F	mm	185	185	204	204	204	204	204	204	244	244
Bottom to Flue Connection Centre G	mm	186	326	260	260	260	367	367	400	540	680
Side to Air Inlet Centre H	mm	109	109	141	141	141	141	141	141	197	177
Bottom to Air Inlet Centre J	mm	291	431	385	385	385	492	583	616	760	895
Top Suspension Centres K	mm	350	350	600	600	600	600	600	600	600	600
Top Suspension Centres L	mm	413	413	623	623	623	623	623	623	623	623



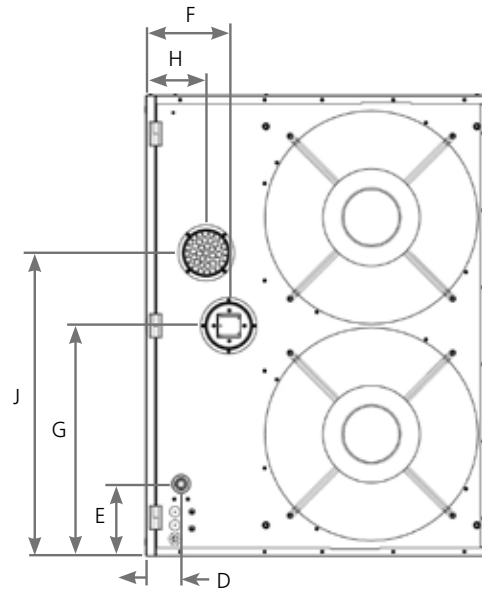
Plan View Photon 10-120



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	9.0									

### 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



Registered in England No. 01390934 | Registered Office Fens Pool Avenue, Brierley Hill, West Midlands, DY5 1QA

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