

# EC centrifugal fan RadiCal: *Compact, efficient, quiet.*

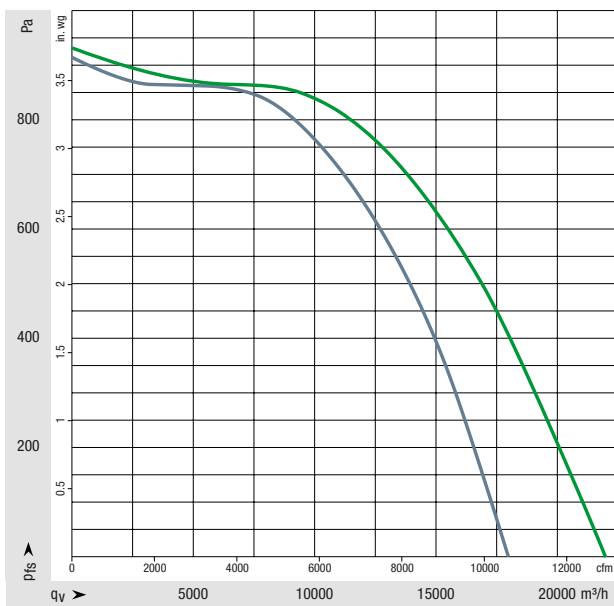
**ebm****papst**

the engineer's choice



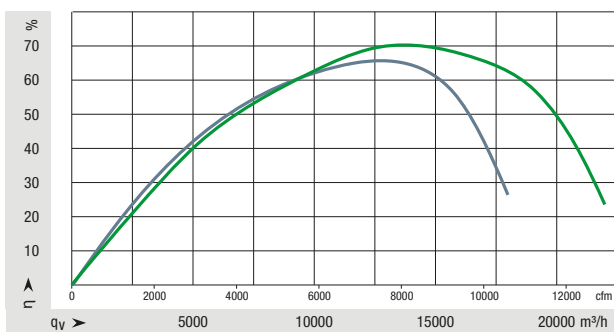
# The power to *change*.

The external dimensions of the improved RadiCal centrifugal fan correspond to those of the previous model. That means trouble-free replacement is no problem. See for yourself in the following comparison. You as customer, simply get an even more powerful RadiCal at identical footprint.



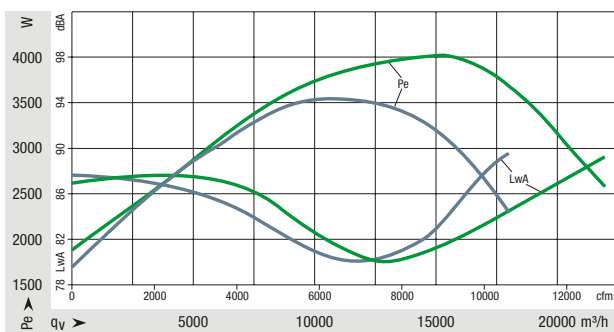
## RadiCal – Centrifugal fan with EC motor.

With the new RadiCal, air performance has been increased considerably while the existing dimensions have been retained. Its special impeller design also allows for significantly higher speed to further increase power density.



## Maximized overall efficiency.

Every new product developed must be economically and ecologically superior to its predecessor. In keeping with this philosophy, the new RadiCal boasts top efficiency values and is also optimized for environmental compatibility, long service life and recyclability.



## Lower noise.

Thanks to lower flow losses in the impeller, lower turbulence and less laminar separation, the fans also have more pleasant noise characteristics.

— R3G 630-RB32-03 previous design  
— R3G 630-FC04-03 new design

# About *ebm-papst*

As technological leader for ventilation and drive engineering, ebm-papst is in demand as an engineering partner in many industries. With over 15,000 different products, we provide the right solution for just about any challenge. Our fans and drives are reliable, quiet and energy-efficient.

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the engineer's choice

## Six reasons that make us the ideal partner:

### **Our systems expertise.**

As experts in advanced motor technology, electronics and aerodynamics, we provide system solutions from a single source.

### **Our spirit of invention.**

Our 600 engineers and technicians will develop a solution that precisely fits your needs.

### **Our lead in technology.**

Our GreenTech EC technology is setting standards worldwide. And our lead is your competitive advantage.

**Closeness to our customers.** At 49 sales offices worldwide.

### **Our standard of quality.**

Our quality management is uncompromising, at every step in every process.

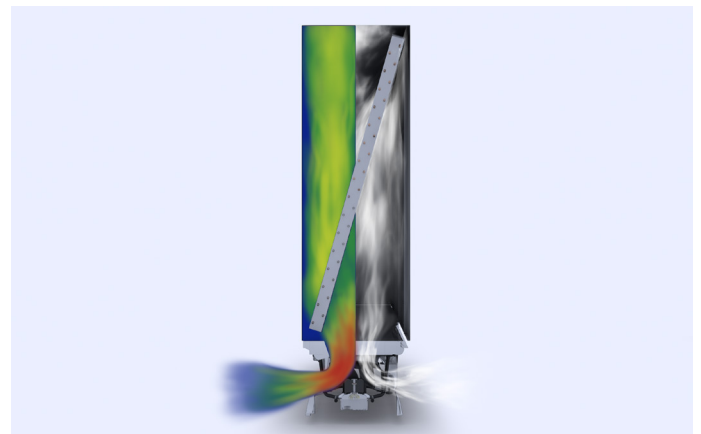
### **Our sustainable approach.**

We assume responsibility with our energy-saving products, environmentally-friendly processes, and social commitment.



## **Steady ambient conditions protect valuable data**

Data is the new gold, and computer room air-conditioning (CRAC) units, used for cooling the servers, keep it flowing freely and ensure that it gets stored safely. In data centers and network control centers, CRAC units keep the temperature constant and maintain optimum air distribution and humidity.



An indispensable component inside CRAC units is the RadiCal centrifugal fan. It has been specifically optimized to provide an efficient distribution of air through said units in continuous operation. With the same compact size, it delivers significantly higher air performance, than its predecessor, enabling optimum use of the limited space available in CRAC units – with considerably better efficiency and acoustics.

# Space-saving and maintenance-free.

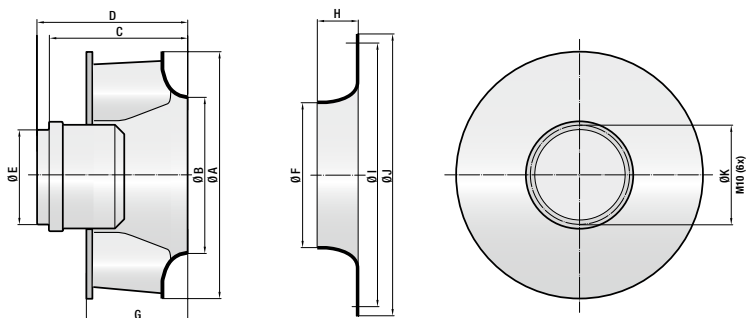
## Increased efficiency.

Comparing power consumption at the same airflow shows how efficient the new RadiCal impeller is when installed. In a CRAC unit, three RadiCal fans running parallel were measured using the previous and the new version. The result: a reduction in power consumption of *more than 10%*.

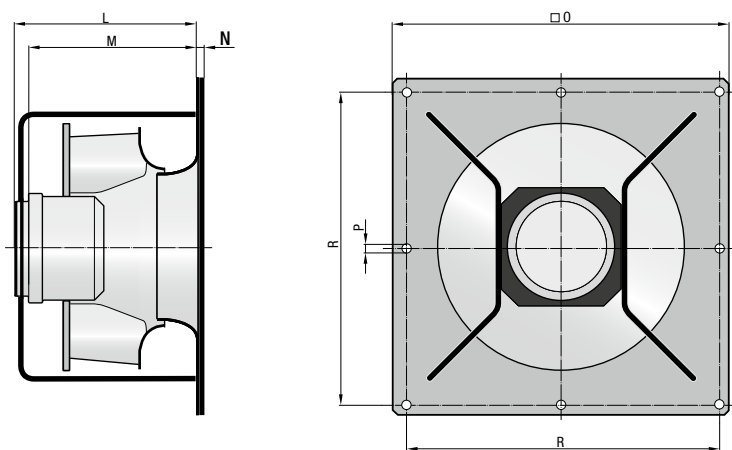
# 10 %

reduction in power consumption.

## Motor-impeller combination



## Complete fan with support bracket

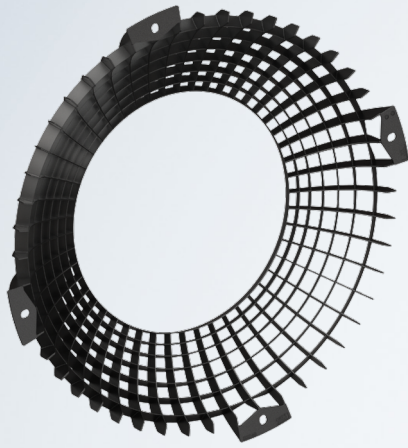


Dimensions	Part number	A	B	C	D	E	F	G	H	I	J	K	Inlet nozzle
Motor-impeller combination*	R3G 630-FA38-03												
	R3G 630-FB32-03	660	492	333	403	232	471	305	80	600	634	252	63355-2-4013
	R3G 630-FC04-03												
	R3G 630-FL98-01	660	492	315	372	169	471	305	80	600	634	186	63355-2-4013
Dimensions	Part number	L	M	N	O	P	R						
support bracket	K3G 630-FA38-03												
	K3G 630-FB32-03	468	399	15	800	11	750						
	K3G 630-FC04-03												
	K3G 630-FL98-02	424	368	15	800	11	750						

Preliminary data. All dimensions in mm. Data sheets available on request. Subject to technical changes.

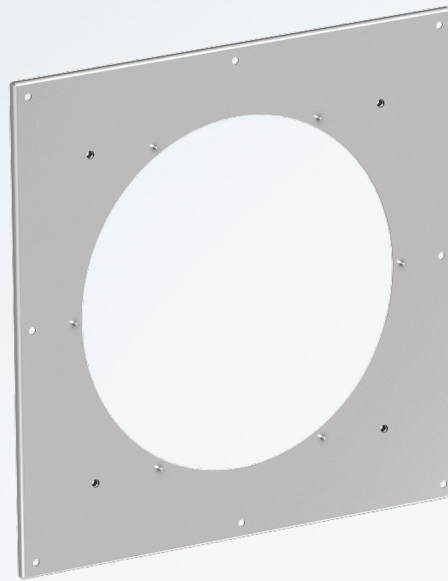
\* The proper inlet nozzle is available on request.

# Compact solution. *Impressive performance*



FlowGrid (optional)

- + **Improved noise performance**
  - Low noise level
  - Dramatically dampened blade passing noise
- + **Unimpaired efficiency**
  - Unchanged air performance
  - Power consumption still low
- + **Effective environmental protection**
  - Noise reduction as an essential aspect of environmentally-friendly operation
- + **Robust design**
  - Made of durable composite material



Inlet nozzle

- + **Pre-assembled for convenience**
  - Optimized positioning of nozzle with respect to impeller
  - Pressure tap for airflow control as standard
- + **Low losses**
  - Optimized impeller inflow

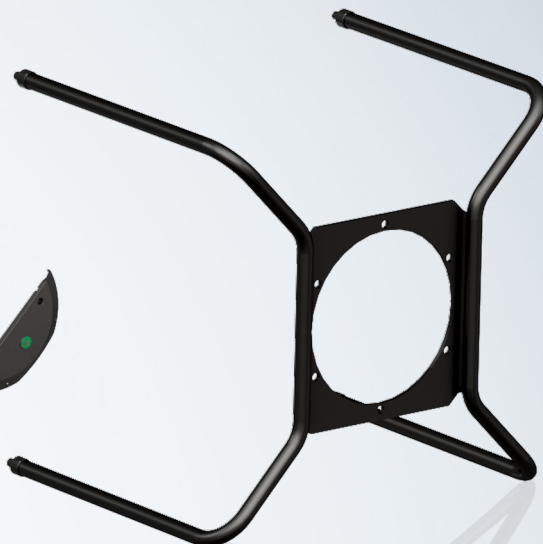
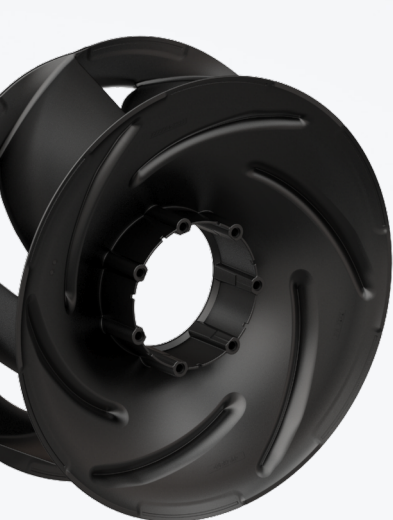


High-performance impeller

- + **High efficiency**
  - Profiled blade geometry for maximum efficiency
- + **Quiet operation**
  - Aerodynamically optimized air-flow for reduced noise
- + **Innovative materials**
  - Impeller made of tough composite material
  - UV- and corrosion-resistant







#### GreenTech EC motor

#### Connection area

#### Support bracket

- + Unrivalled compactness**
  - Impeller mounted directly on motor rotor
- + High efficiency**
  - Low copper and iron losses
  - Synchronous running prevents slip losses
  - Use of permanent magnets prevents magnetic hysteresis losses in rotor
- + Economical operation**
  - Optimized commutation for partial-load operation down to 1:10
  - High efficiency even in partial load operations
- + Minimal noise emission**
  - Commutation and stator design ensure low-noise magnetization of energizing field
  - High, acoustically imperceptible cycle frequency
- + Long service life**
  - Maintenance-free bearings
  - Brushless commutation
- + Safe operation**
  - Insulated bearing system to prevent bearing currents

- + Precision control**
  - Infinitely variable speed control with 0–10 V DC / PWM control signal or MODBUS-RTU
  - Monitoring through MODBUS-RTU interface
- + Global usability**
  - For use with 50- and 60-Hz grids
  - Worldwide voltage variants and grid forms
- + Safe operation**
  - Safe operation through integrated locked rotor and thermal overload protection
  - Status LED
- + Simple commissioning**
  - Simple connection via terminal box
  - Plug & play: no adjustment effort required
  - RFID for wireless parameterization
- + Maximum flexibility**
  - Programmable interface

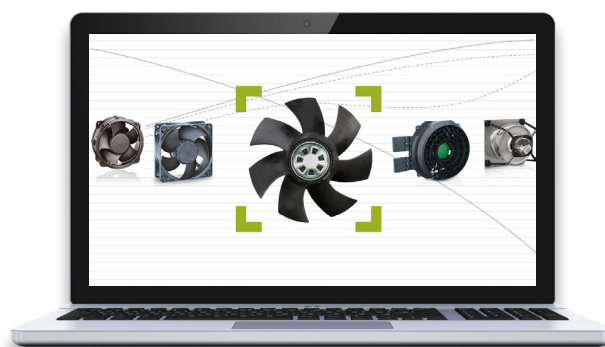
- + Simple installation**
  - Complete system for quick and easy installation
  - Simple attachment using nozzle plate
  - Installation with horizontal or vertical motor shaft
  - Allows for versatile use
- + Aerodynamically perfected**
  - Aerodynamically efficient
  - Optimized positioning of nozzle ex works



# The fast, safe way to your optimum fan solution.

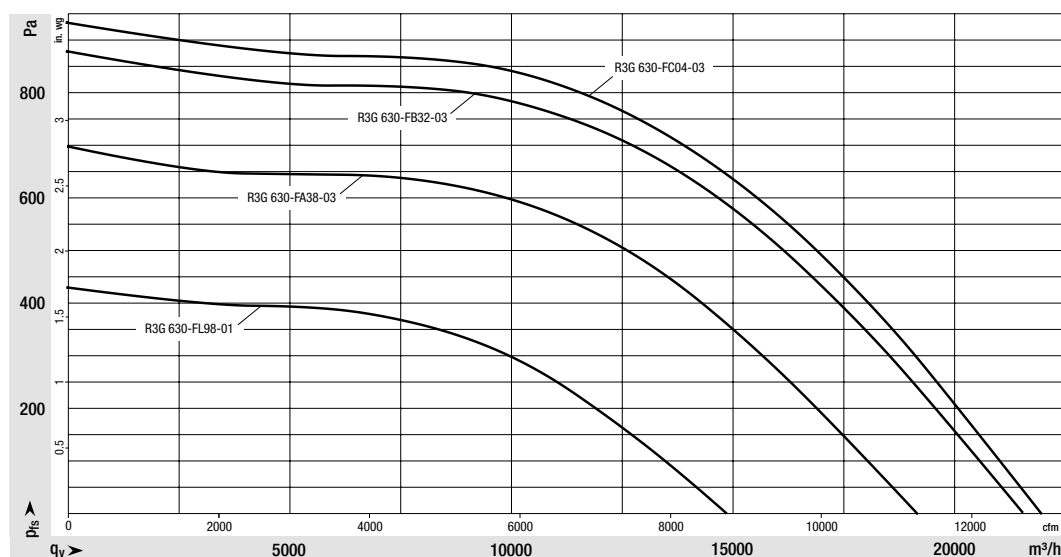
**Clear facts, real values: ebm-papst FanScout, the reliable way to find the right fan.**

It takes just a few mouse clicks for our FanScout software to get you to the product that meets your needs best. Find the best solution based, on (factors such as) operating characteristics, air performance, operating time and space requirements. Calculate life cycle costs in advance. Your individual contact at ebm-papst is happy to provide you with a tailored product selection for the FanScout that fits your exact demands.



Support bracket	Motor-impeller combination	Nominal voltage range	Frequency	Speed	Max. power consumption	Max. input current	Permitted ambient temperature
Part number	Part number	VAC	Hz	min <sup>-1</sup>	W	A	°C
K3G 630-FA38-03	R3G 630-FA38-03	3-380-480 V	50/60	1.270	2.650	4,1	-40...+40
K3G 630-FB32-03	R3G 630-FB32-03	3-380-480 V	50/60	1.420	3.700	5,7	-40...+40
K3G 630-FC04-03	R3G 630-FC04-03	3-380-480 V	50/60	1.470	4.050	6,1	-40...+40
K3G 630-FL98-02	R3G 630-FL98-01	3-380-480 V	50/60	1.000	1.300	2,0	-40...+40

Preliminary data. All dimensions in mm. Data sheets available on request.  
Subject to technical changes.



**More information?**

**Here it is:**

For technical questions,  
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