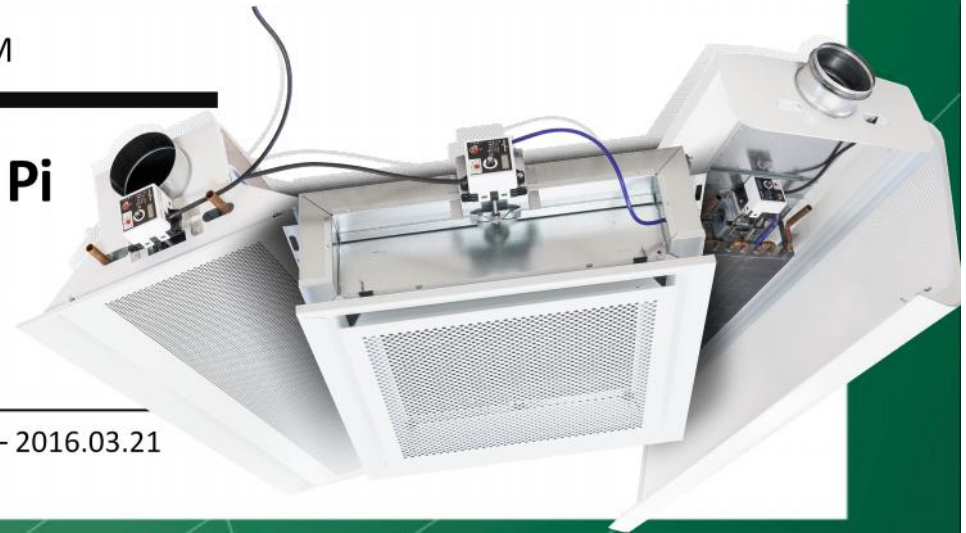




FLEXIBLE PRESSURE INDEPENDENT VAV CHILLED BEAM

WEGA II, NOVA II & LYRA II *with Pi*
– THE ONLY CHILLED BEAMS
YOU NEED!

VER. 4 – 2016.03.21



WE BRING
BETTER
AIR TO LIFE



Two customer benefits – Air Comfort & Fire Safety



AIR COMFORT

Solutions for superior Air Comfort, with exceptional energy efficiency and low life cycle cost

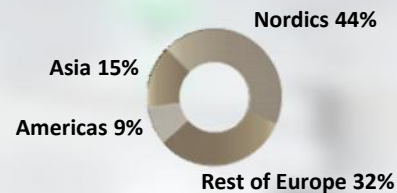


FIRE SAFETY

Reliable products to protect people and buildings with ventilation systems in the event of fire



WE ARE A GLOBAL LEADER WITHIN AIR TECHNOLOGY SOLUTIONS – EACH YEAR WE SUPPLY THOUSANDS OF PROJECTS ALL OVER THE WORLD



€400M
FLÄKT WOODS GROUP
ANNUAL TURNOVER



15
MODERN
FACTORIES



>2000
TALENTED
EMPLOYEES



65
COUNTRIES
WORLDWIDE

Solutions for all types of environments



HOTELS & RESTAURANTS



OFFICES



EDUCATION



SHOPPING CENTRES



RESIDENTIAL



MARINE



TUNNELS & METROS



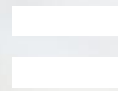
HYGIENE



e³ – THE CORNERSTONES IN OUR QUEST TO PROVIDE THE BEST POSSIBLE AIR COMFORT AND FIRE SAFETY



**ENVIRONMENT
ECONOMICAL
EXPERTISE**



**ENVIRONMENTALLY
FRIENDLY**



**ECONOMICAL &
ENERGY EFFICIENT**



**EXPERTISE
DRIVEN**

5 product families



WITH 5 PRODUCT FAMILIES THAT COVERS THE LARGEST PRODUCT RANGE IN THE MARKET – **THERE'S ALWAYS A PERFECT FIT**



AIR MOVEMENT



AIR TREATMENT



AIR DISTRIBUTION



AIR MANAGEMENT



AIR DIFFUSION



Environmentally conscious



A STRONG FOCUS ON ENERGY EFFICIENCY AND SUSTAINABLE BUILDINGS

We develop innovative products and solutions that optimises comfort and functionality – while at the same time reducing energy consumption and the environmental impact of building ventilation.



Advanced research and development



WORLD-CLASS INNOVATIONS AND **AIR TECHNOLOGY** PRODUCTS RESEARCH

Fläkt Woods has a proud history of innovation. Our Centres of Excellence has some of the most advanced facilities for product development and lab testing anywhere in the world.



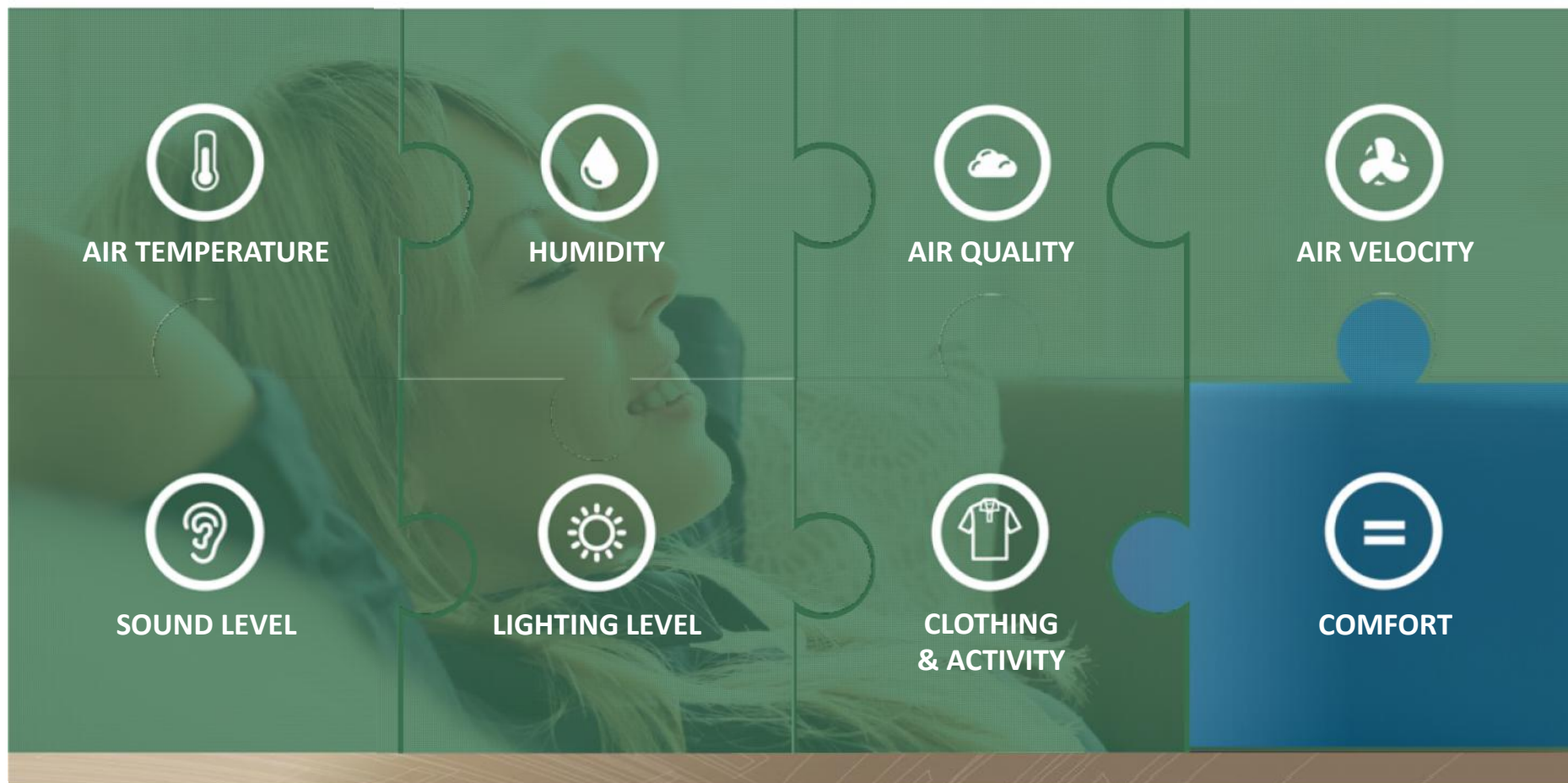
COMFORT WITH CHILLED BEAM SYSTEMS

FläktWoods



COMFORT
WITH CHILLED
BEAM SYSTEMS

INDOOR COMFORT





90% OF MODERN LIVING IS SPENT INDOORS
THERE IS COMFORT ONLY WHEN ALL PIECES ARE IN PLACE

OPTIMISED COMFORT WITH CHILLED BEAMS



FULLY MIXED AIR
Low temperature gradient



LOW NOISE
No fan in Chilled Beams



FRESH AIR
Right humidity & temp



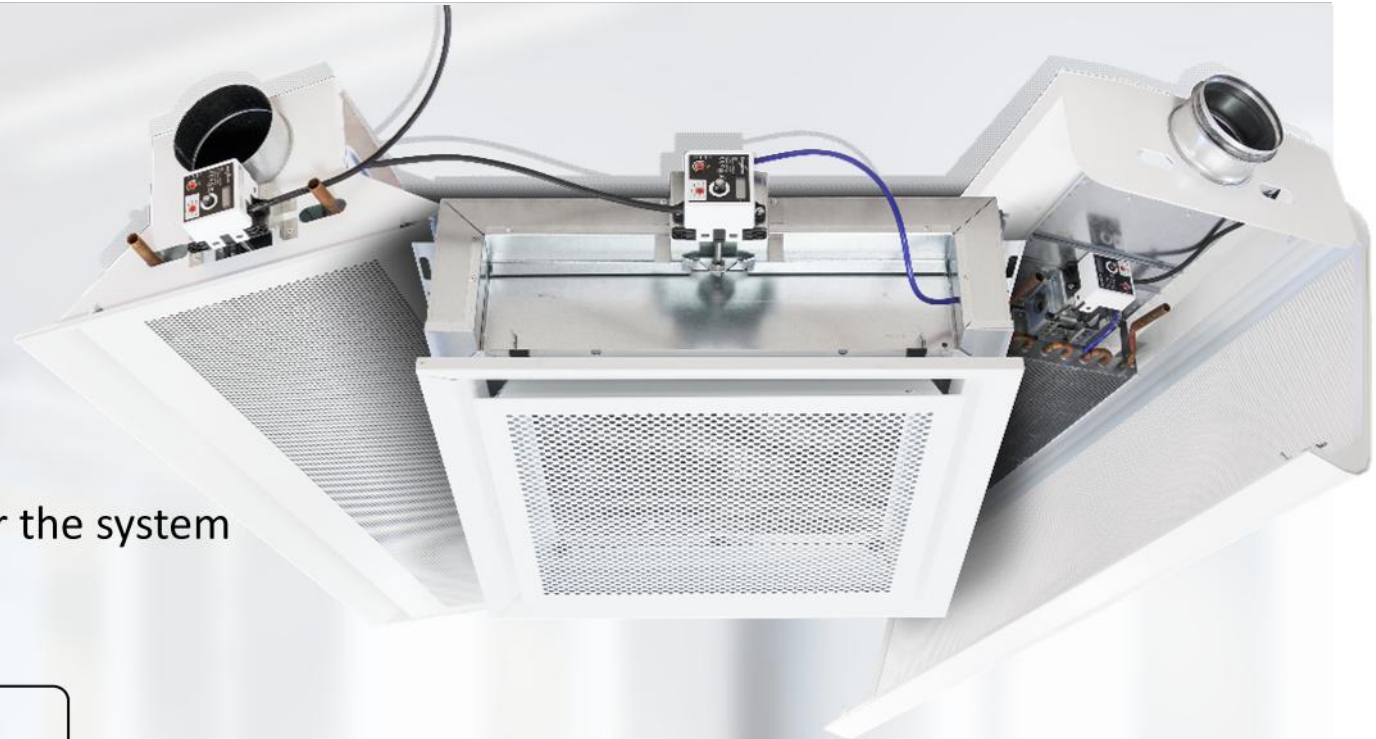
DRAUGHT FREE
Low air velocity

HIGH EFFICIENCY LARGE SAVINGS

- High efficiency
- Low maintenance
- Smaller chiller size
- Smaller AHU size for the system



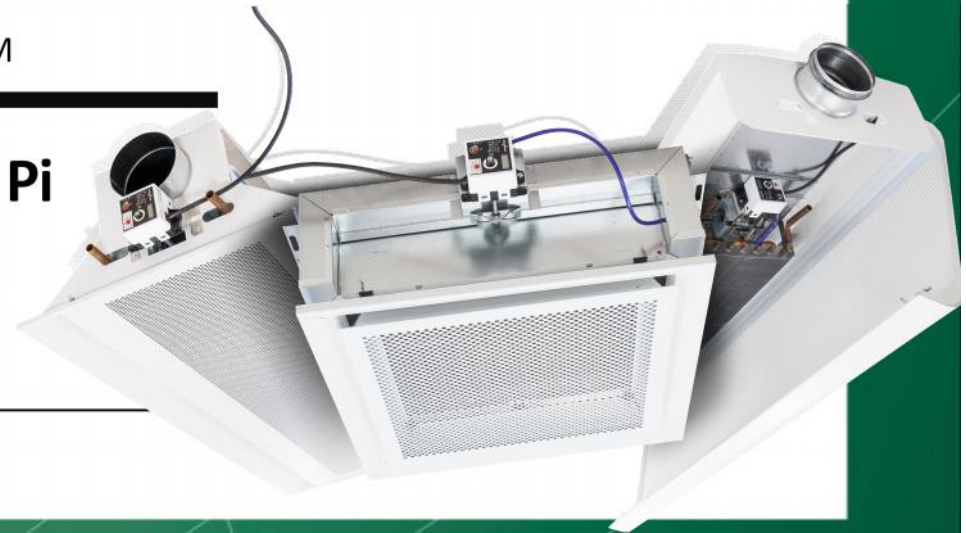
LOW LIFE CYCLE COST





FLEXIBLE PRESSURE INDEPENDENT VAV CHILLED BEAM

WEGA II, NOVA II & LYRA II *with Pi*
– THE ONLY CHILLED BEAMS
YOU NEED!



Chilled Beam with Pi – pressure independent VAV function

A GIANT STEP
FORWARD

Success



WEGA II
by FLÄKT WOODS

LYRA II
by FLÄKT WOODS

NOVA II
by FLÄKT WOODS

Chilled Beam with Pi – pressure independent VAV function

- More flexible than before
- Low Life Cycle Cost
- Optimal comfort
- Suitable for any ductwork



WEGA II
by FLÄKT WOODS

LYRA II
by FLÄKT WOODS

NOVA II
by FLÄKT WOODS

Chilled Beam with Pi – pressure independent VAV function

- More flexible than before
- Low Life Cycle Cost
- Optimal comfort
- Suitable for any ductwork



Recessed
installation

Available in both
Exposed & Recessed
installation

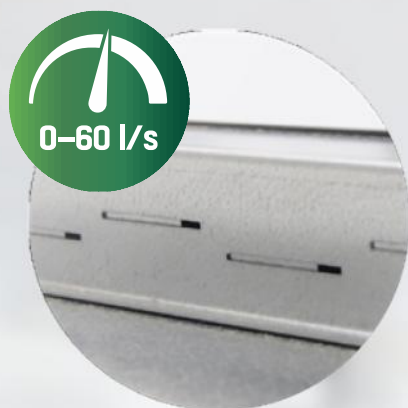
Exposed
installation

WEGA II
by FLÄKT WOODS

LYRA II
by FLÄKT WOODS

NOVA II
by FLÄKT WOODS





WIDE AIRFLOW RANGE
– stepless airflow control



FLEXIBLE LAYOUT
– futureproof



NO EXTRA DIFFUSER
– cost effective

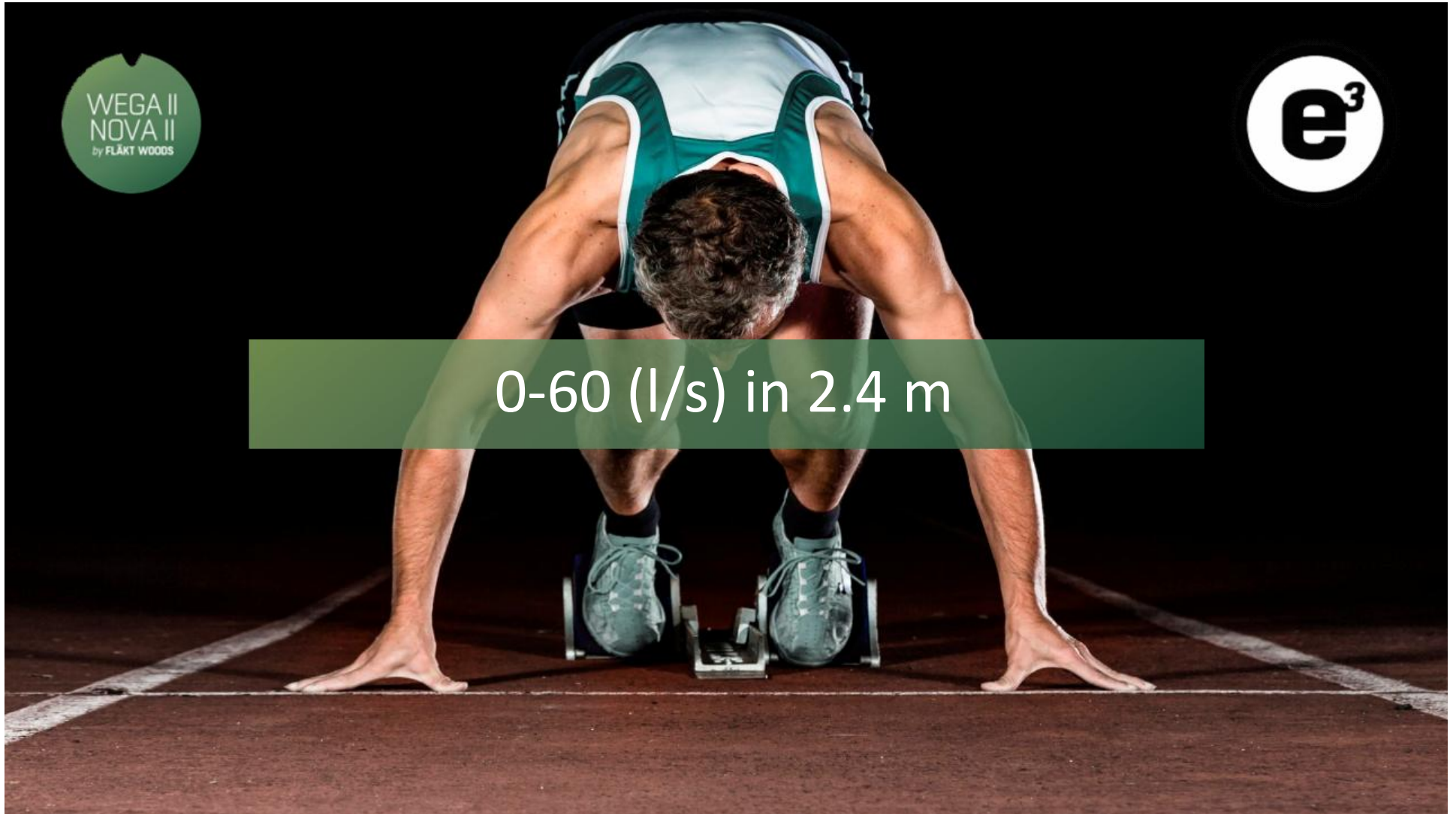


AESTHETIC SOLUTION
– many variants

WEGA II
NOVA II
by FLÄKT WOODS



0-60 (l/s) in 2.4 m



MANUAL ADJUSTABLE NOZZLES – WEGA II & NOVA II



ENSURED COANDA EFFECT REGARDLESS OF AIRFLOW



STEPLESS ADJUSTABLE NOZZLES

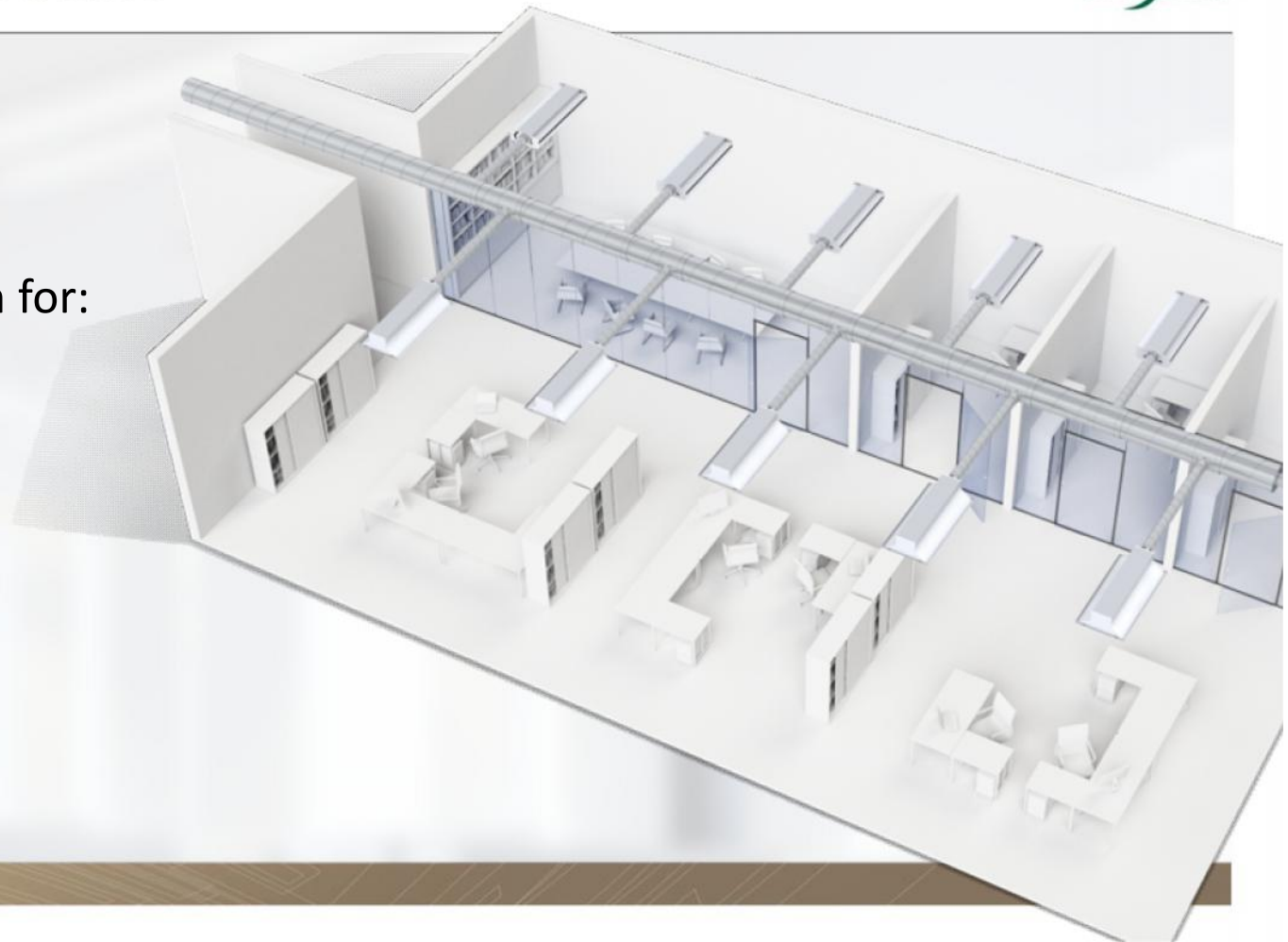


MANUAL ADJUSTABLE NOZZLES – LYRA II



FULL FLEXIBILITY
WEGA II & NOVA II
is the perfect solution for:

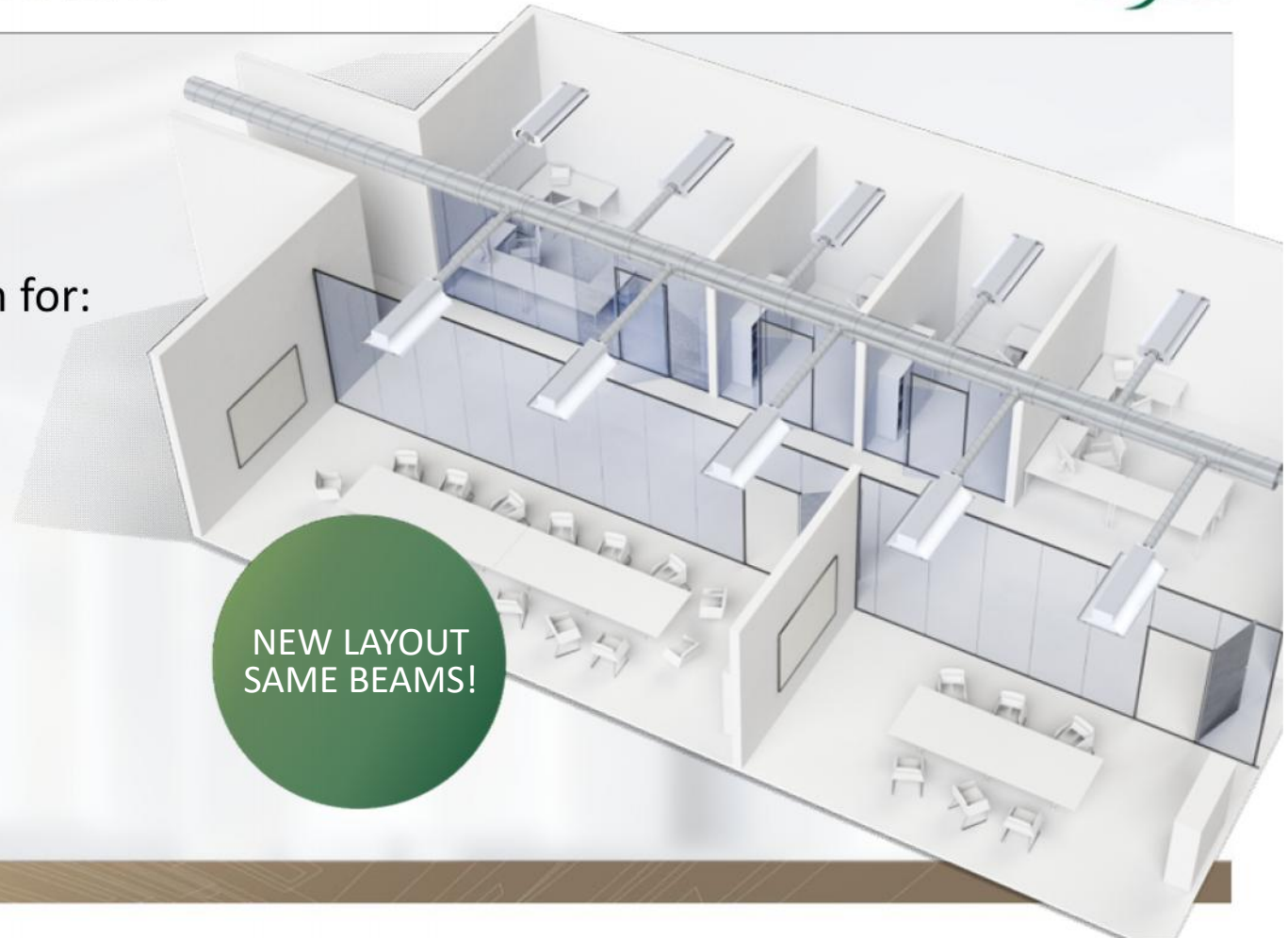
- Tenants
- Renovation projects
- Layout changes

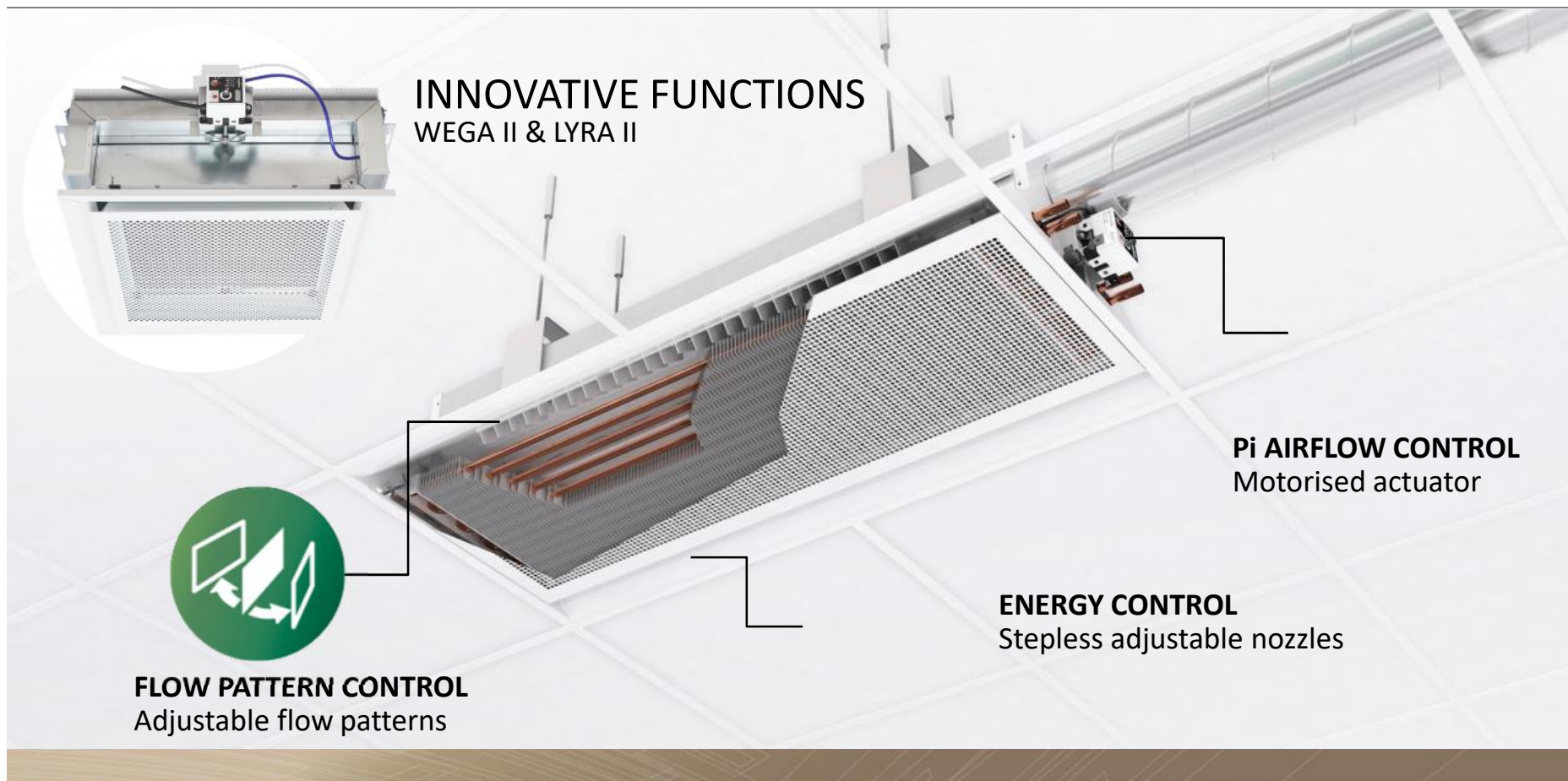


FULL FLEXIBILITY
WEGA II & NOVA II
is the perfect solution for:

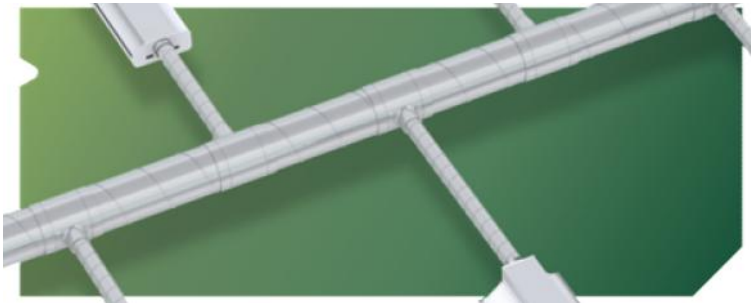
- Tenants
- Renovation projects
- Layout changes

NEW LAYOUT
SAME BEAMS!

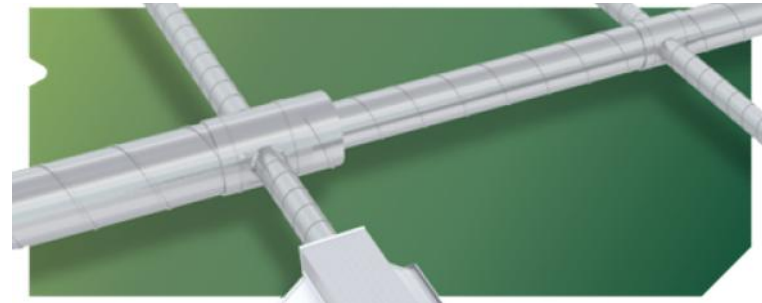




PRESSURE INDEPENDENT– SUITS ALL DUCTWORKS



PRESSURE REGAIN DUCT SYSTEM



TRADITIONAL DUCT SYSTEM



COMPLETELY
PRESSURE INDEPENDENT
WITH Pi FUNCTION



VARIABLE DUCT PRESSURE

STEPLESS ADJUSTABLE NOZZLES



ENSURED COANDA EFFECT REGARDLESS OF AIRFLOW

TECHNOLOGY THAT GUARANTEES THE OPTIMUM COMFORT IN THE ROOM



ENERGY CONTROL

Stepless adjustable nozzles



FLOW PATTERN CONTROL

Adjustable flow patterns



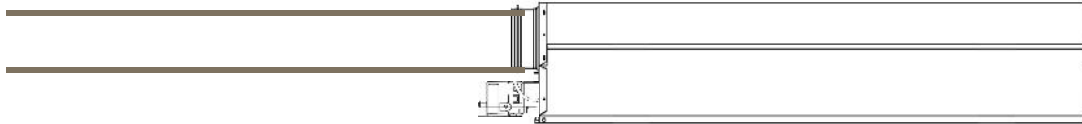


Pi solution vs. competitors solution



Pi actuator

30 l/s
80 Pa

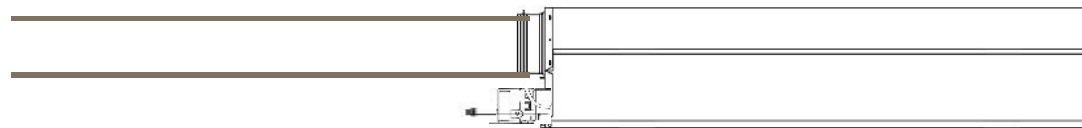


Nozzle setting



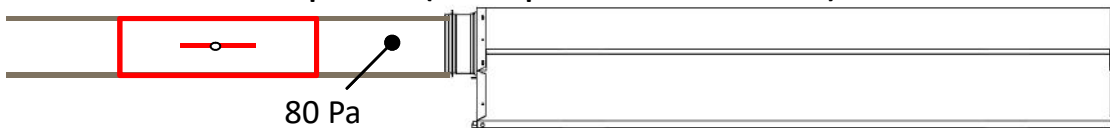
Nozzles are changing with the airflow

15 l/s
80 Pa



Chilled beam with damper – (Competitor solution)

30 l/s
80 Pa



80 Pa

Nozzle setting



Nozzles are NOT changing with the airflow

15 l/s
80 Pa

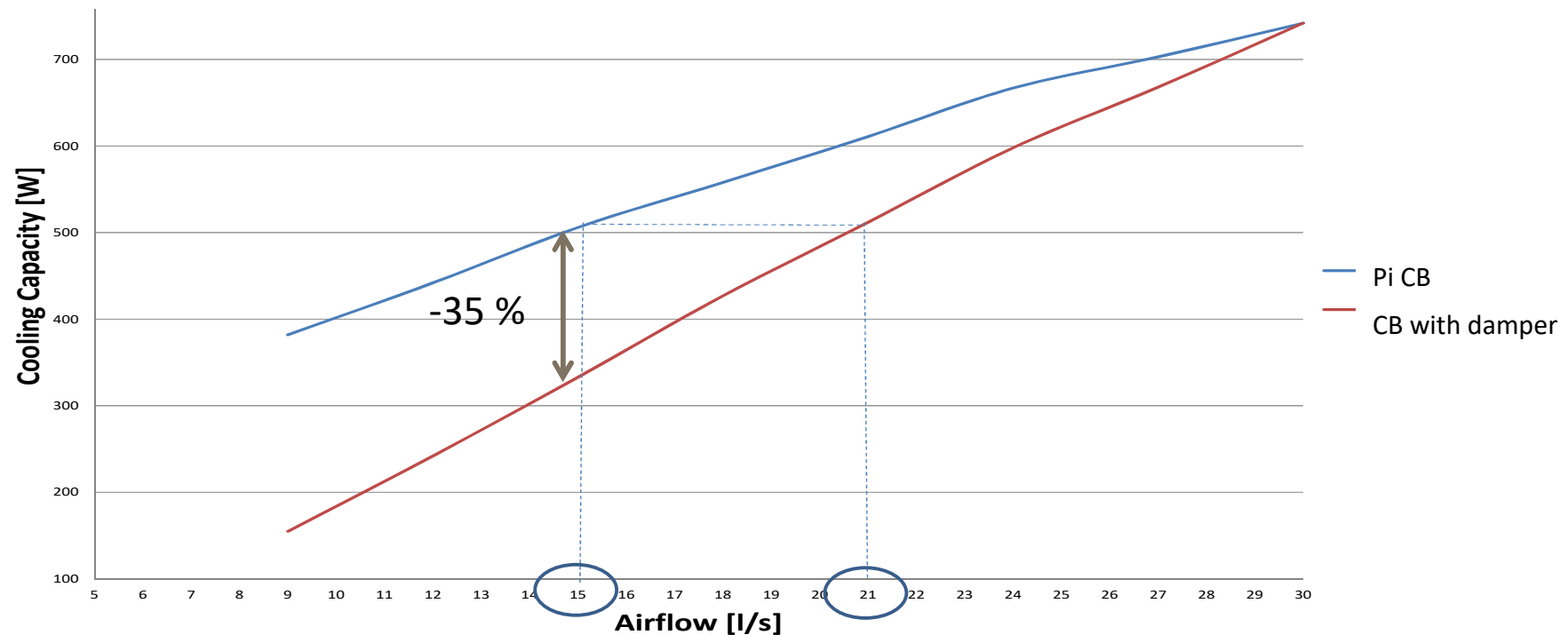


20 Pa



Cooling capacity comparison

Chilled beam with damper gives 35 % lower cooling capacity with half airflow vs. Pi
Chilled beam with damper needs 21 l/s instead of 15 l/s to get same cooling capacity



TECHNOLOGY THAT GUARANTEES THE OPTIMUM COMFORT IN THE ROOM



ENERGY CONTROL
Stepless adjustable nozzles



FLOW PATTERN CONTROL
Adjustable flow patterns

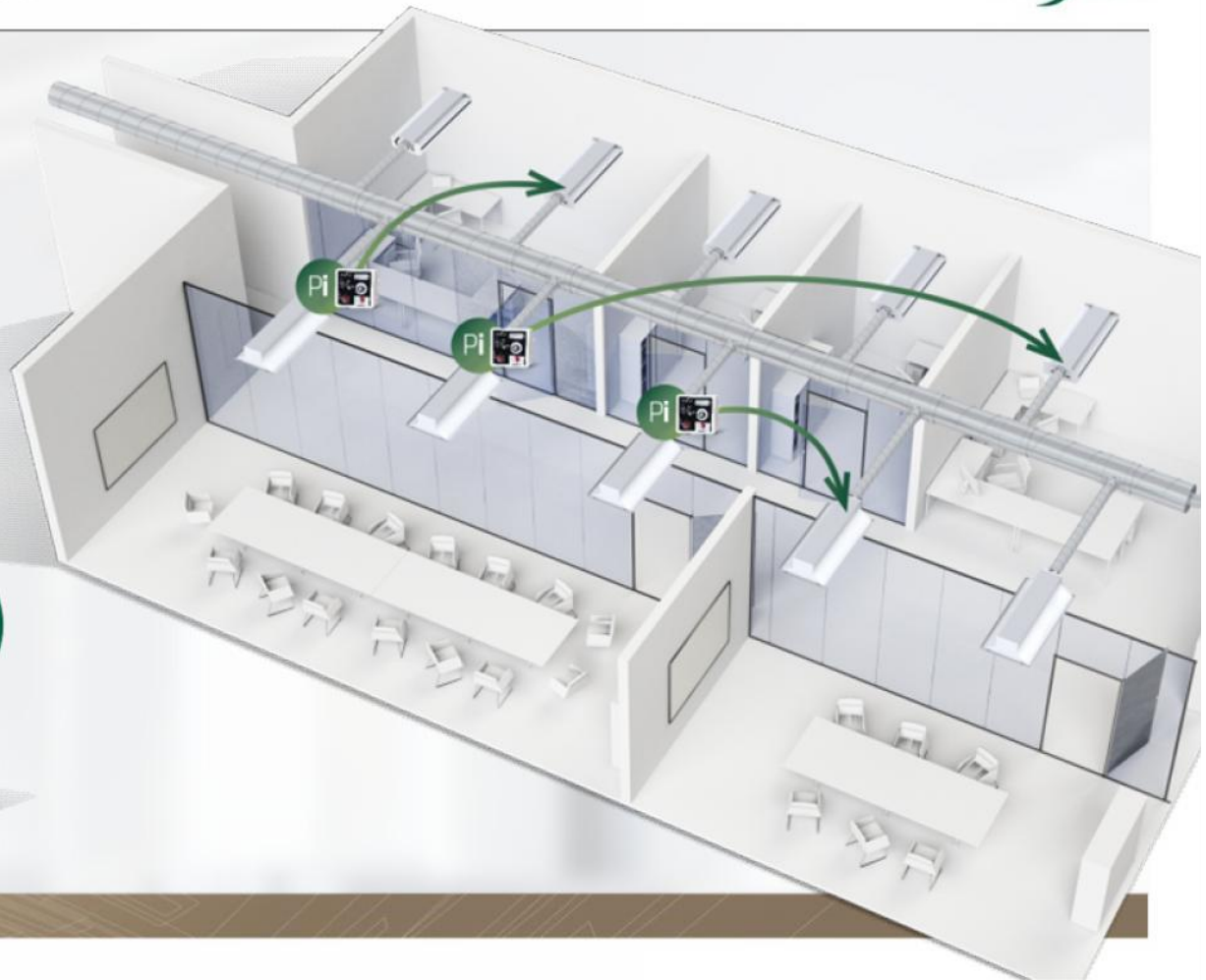




**FLOW
PATTERN
CONTROL**

FULL FLEXIBILITY WITH Pi-ACTUATOR

- Easy to move
- Quick commissioning



QUICK AND EASY COMMISSIONING

1 Set Max. airflow

2 Set Min. Airflow

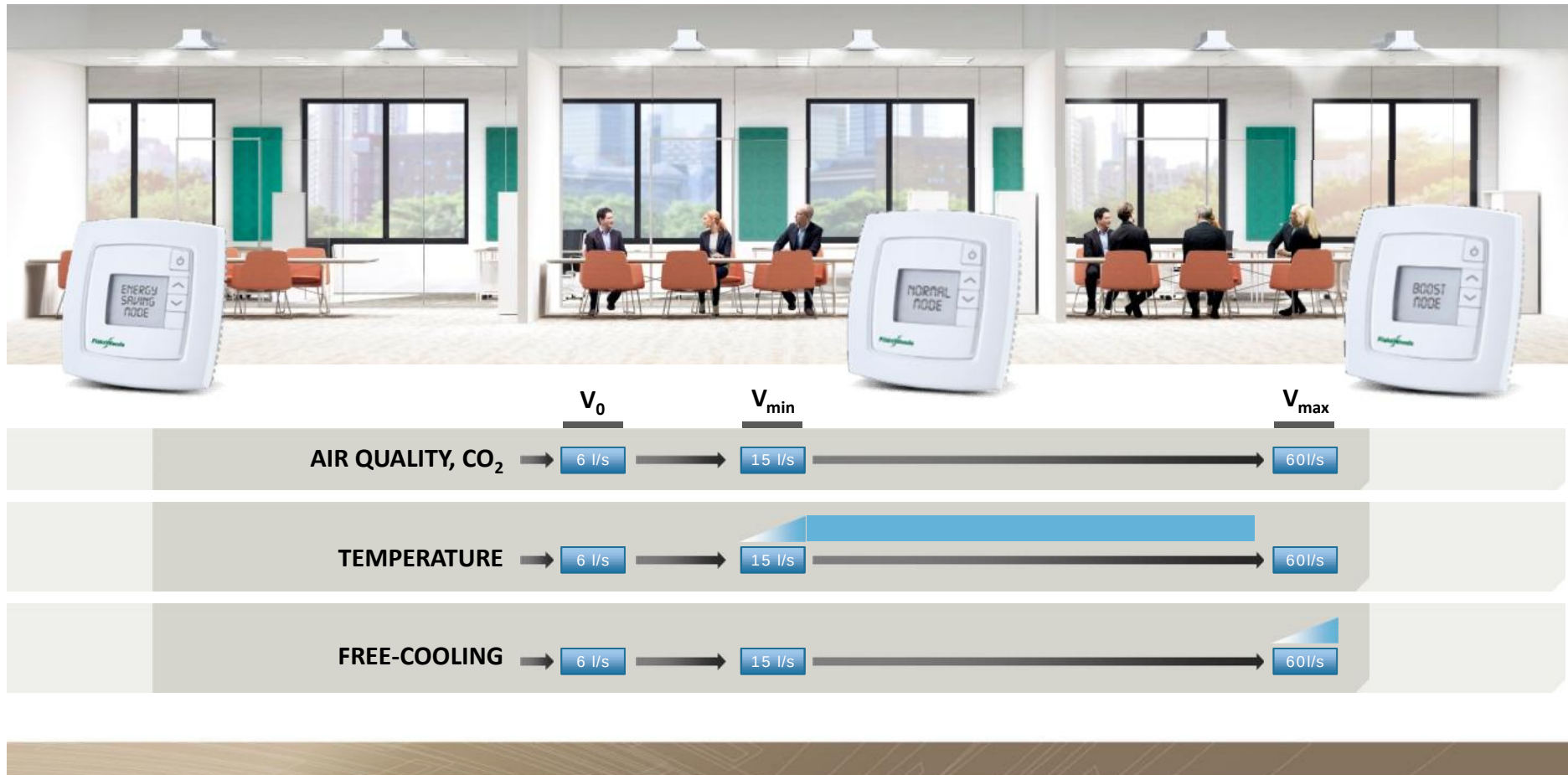
3 Set non-occupancy airflow

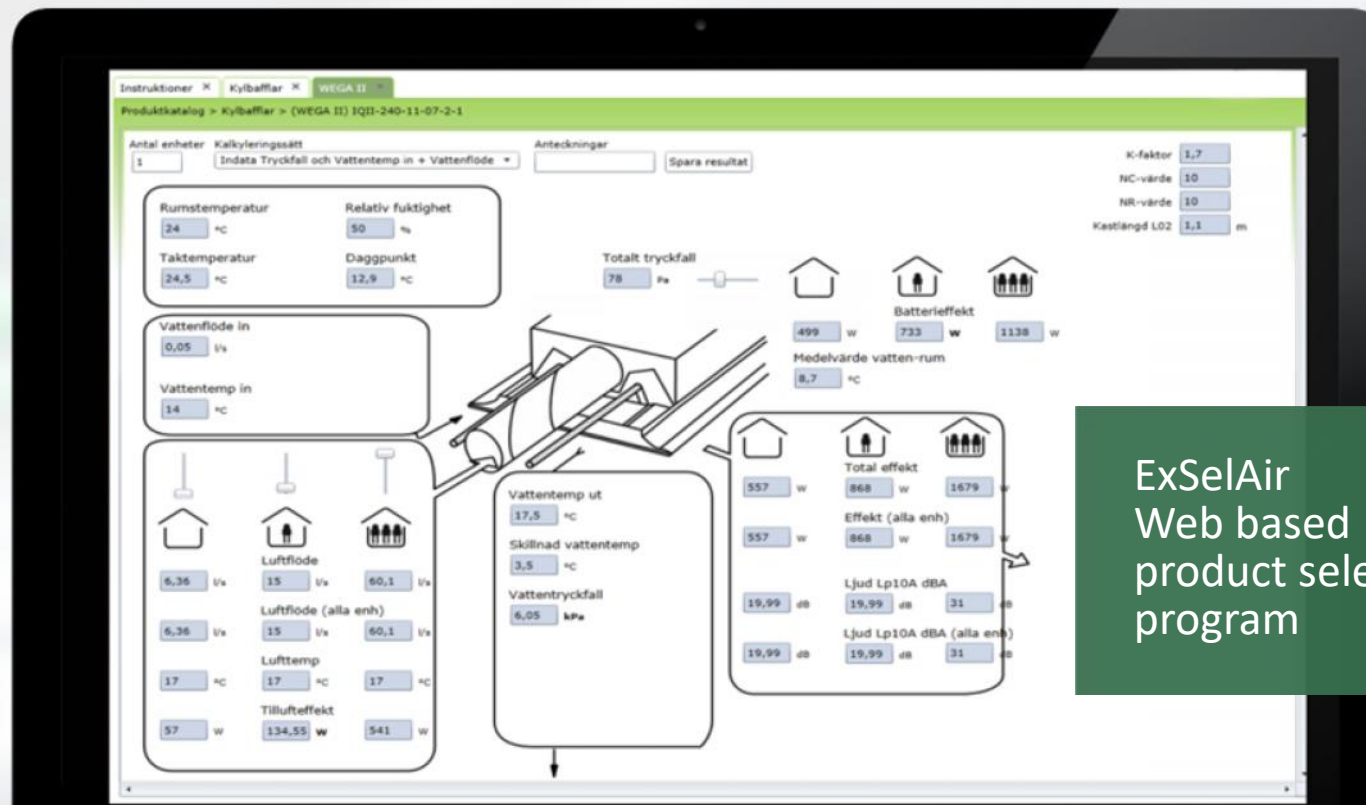


ACCESSORIES THAT RESOLVES ALL NEEDS



Pi FUNCTION – WEGA II, NOVA II & LYRA II





ExSelAir
Web based
product selection
program

MagiCad – WEGA II, NOVA II & LYRA II



MagiCAD®

QPD-FILES & SUPPORT



PERSONAL PREFERENCES? NO PROBLEM!



DIFFERENT DIMENSIONS



PERFORATED PLATES



SPECIAL COLOURS



INTEGRATED LIGHTING



PROPERTY OWNER

- Adapted design
- Huge layout flexibility
- Compatible with IPSUM



CONSULTANT

- Flexible – broad application area
- Quick and easy selection with ExSelAir
- Compatible with IPSUM



CONTRACTOR

- Quick installation
- Quick commissioning
- Base product to complement your wide offering



THE CHILLED BEAM RANGE



Chilled Beam Range



iQ Star Wega II

Active

Ceiling Flush Mounted

QUICK FACTS

- Length: 120 to 300 cm
- Height: 152, 190, 250 mm
- Pi actuator
- Nozzles: 0–36 mm
- Factory mounted controls
- Easy installation with fastening brackets



Flexicool IQiD

Active

Ceiling Flush Mounted

QUICK FACTS

- Length: 120 to 300 cm
- Many options are available to provide a multifunctional chilled beam, including lighting
- Nozzles: 0–18 mm
- Easy installation with fastening brackets



iQ Star Lyra

Active

Cassette Ceiling Flush/Exposed Mounted

QUICK FACTS

- Sizes: 60x60 and 60x120 cm
- Recessed and exposed versions available
- 4 step nozzles
- Easy installation with fastening brackets

Chilled Beam Range



iQ Star Lyra II

Active

Cassette Ceiling Flush/Exposed Mounted

QUICK FACTS

- Sizes: 60x60 and 60x120 cm
- Recessed and exposed versions available
- Pi actuator
- Nozzles: 0–36 mm
- Factory mounted controls
- Easy installation with fastening brackets



iQ Star Nova II

Active

Ceiling Exposed Mounted

QUICK FACTS

- Length: 120 to 300 cm (every 30 cm)
- Rounded shape
- Pi actuator
- Nozzles: 0–36 mm
- Factory mounted controls
- Easy installation with fastening brackets



iQ Star Stella

Active

Ceiling Exposed Mounted

QUICK FACTS

- Length: 180 to 300 cm
- Many options are available to provide a multifunctional chilled beam, including lighting
- Motorised energy control
- 6 step nozzles
- Easy installation with fastening brackets

Chilled Beam Range



Silencia

Active

Bulkhead Mounted

QUICK FACTS

- Length: 180 to 300 cm
- 4 air levels
- Horizontal air connection
- Simple installation



Flexicool QPBA/QPVA

Passive

Cassette Ceiling Flush/Exposed Mounted

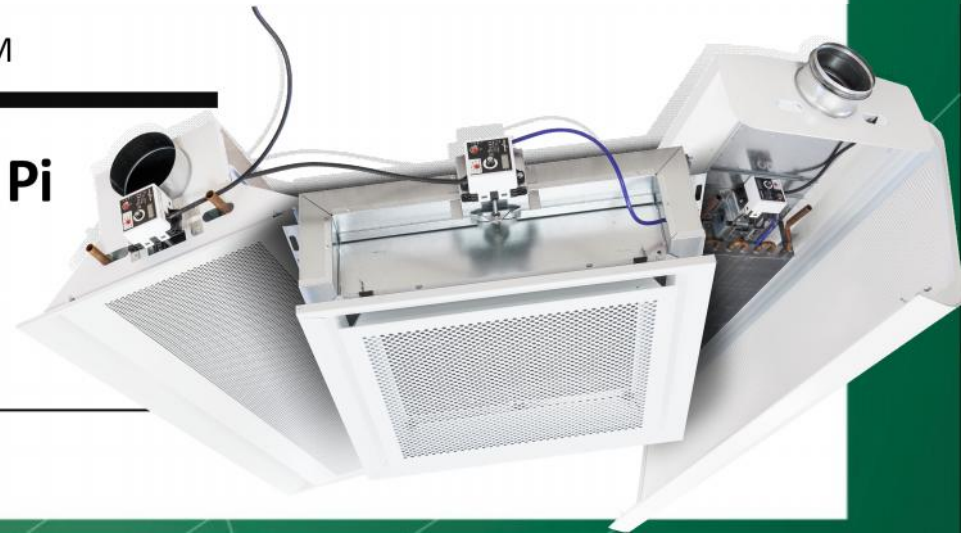
QUICK FACTS

- Size QPBA: 480 mm
- Size QPVA: 560 mm
- Available in different heights
- False ceiling/exposed installation
- Easy installation with fastening brackets



FLEXIBLE PRESSURE INDEPENDENT VAV CHILLED BEAM

WEGA II, NOVA II & LYRA II *with Pi*
– THE ONLY CHILLED BEAMS
YOU NEED!



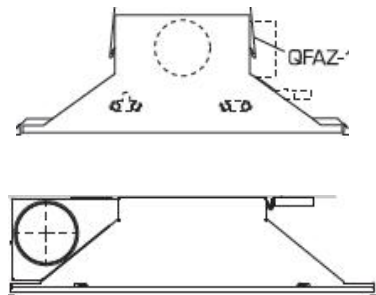
SPECIFICATIONS



Standard Design Active Chilled Beam in 120 cm to 300 cm lengths in 60 cm increments

Height

- Standard 250 mm
- Intermediate 190mm
- Low Height 152 mm



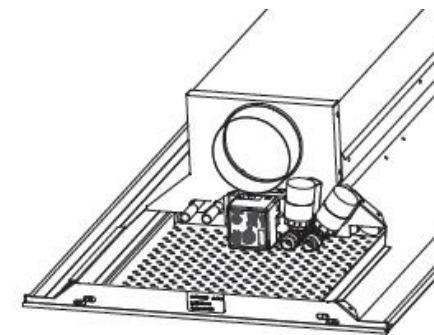
Coil Options

- 10 tube for higher capacity
- 8 tube for normal capacity
- 8 tube for cooling/2 tube for heating
- 6 tube for cooling/2 tube for heating
- 2 circuit/parallel flow for 240-300 cm length



Extended Casing

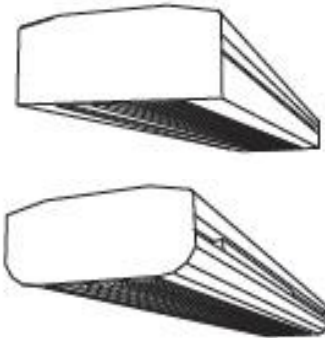
- For front plate access to connections
- Hygienic back plate option



Standard Design Active Chilled Beam. 120 cm to 330 cm lengths in 30 cm increments

Profile

- Square edge
- Rounded edges



Coil Options

- 10 tube for higher capacity
- 8 tube for normal capacity
- 8 tube for cooling/2 tube for heating
- 6 tube for cooling/2 tube for heating
- 2 circuit/parallel flow for 270-330 cm length



Integrated Lighting

- Direct lighting
- Fluorescent or LED
- DALI or DSI protocol
- Louvre or Lens



Standard Design Active cassette Chilled Beam. 60 x 60 cm and 60 x 120 cm

Execution

- Normal flow & High flow
- Flow Pattern Control - FPC
- Cooling & Cooling/Heating
- Heights: 220 and 190 cm
- Ø125 & Ø160 Spigot

Integrated control



Recessed or Exposed



Chilled beam iQ Star WEGA II – Length = 240 cm

TYPICAL PERFORMANCE EXAMPLES



CELLULAR OFFICE



1 × 240 cm WEGA II at 80 Pa
Volume: 3m × 4m × 2.7 high

- Ventilation 6 l/s – 61 l/s
- Cooling 62 w – 1600 w



MEETING ROOM



2 × 240 cm WEGA II at 80 Pa

Volume: 6m × 4m × 2.7 high

- Ventilation 12 l/s – 122 l/s
- Cooling 124 W – 3200 W



OPEN PLAN OFFICE



4 × 240 cm WEGA II at 80 Pa
Volume: 12m × 4m × 2.7 high

- Ventilation 24 l/s – 244 l/s
- Cooling 248 W – 6400 W



DCV OPERATION WITH Pi FUNCTION



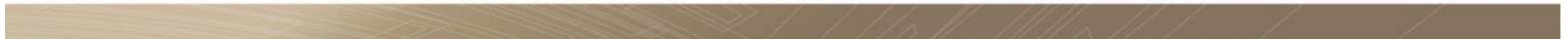
Airflow: 12 l/s
CO₂ level: 400 PPM
P_{cooling}: 900 W

Airflow: 25 l/s
CO₂ level: 500 PPM
P_{cooling}: 1300 W

Airflow: 115 l/s
CO₂ level: 700 PPM
P_{cooling}: 2500 W

$\Delta P_{TOTAL} = 70 \text{ Pa}$
 $q_w = 0.05 \text{ l/s}$
 $\Delta T = 8 \text{ }^\circ\text{C}$

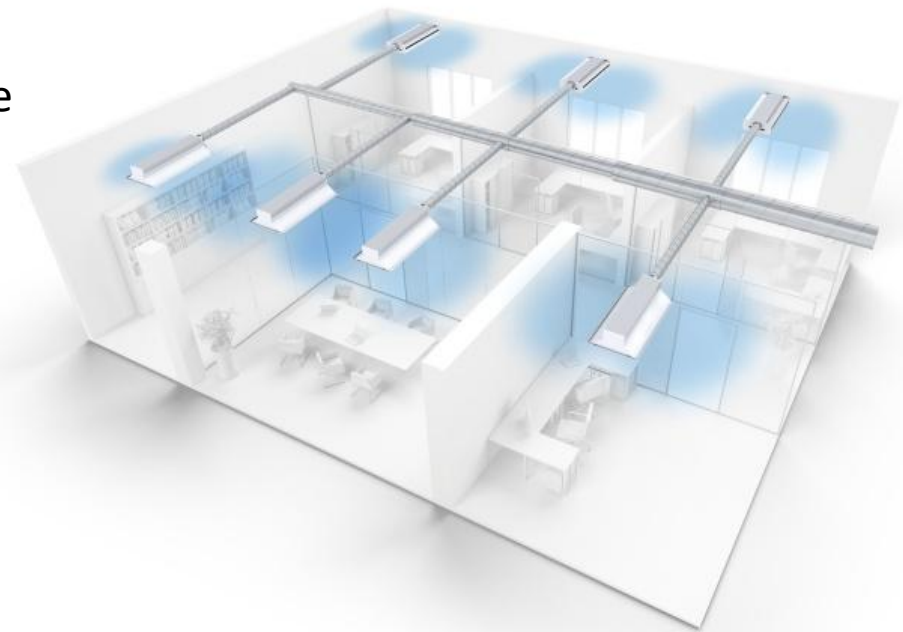
DEMAND CONTROLLED VENTILATION



TYPICAL CHILLED BEAM SYSTEM



- CAV ventilation system
- Vary water flow to control temperature
- System designed for peak conditions (100% occupancy)



Offices are normally ventilated for:



TYPICAL OCCUPANCY LEVEL



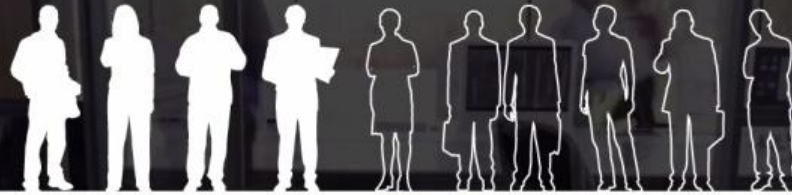
But, typically, occupancy averages only:



TYPICAL OCCUPANCY LEVEL

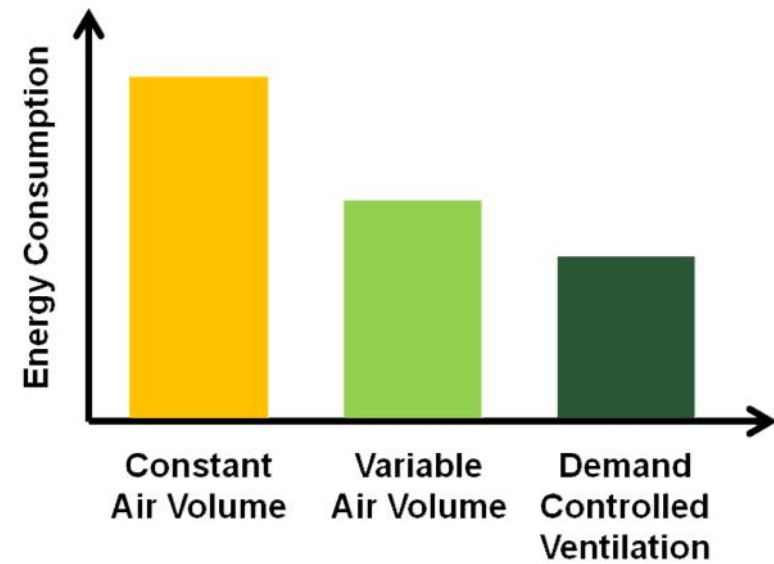


But, typically, occupancy averages only:



Right amount of fresh air at the right temperature at the right time!

- Comfortable indoor air climate.
- Optimum energy consumption.



Pi FUNCTION – SIMPLE BUT GAME CHANGER

FläktWoods



- Adjusts and tracks airflow
- Independent of pressure changes
- Available also as retrofit



- VAV functionality suitable for any type of duct system
- Demand Controlled Ventilation
- Can be dismantled from one beam and mounted on other beam in case of change in room application
- Retrofit for future plans



High flexibility

COMPONENTS OF DCV

