

WISE Kite Ceiling

Active air diffuser for Swegon's WISE System for demand-controlled ventilation



QUICK FACTS

- Variable or constant flow regulation
- Wireless communication via radio
- Integrated sensor
- Easy Access
- Variants:
 - Connection Ø160 or Ø250

WISE Kite CR Size	AIR FLOW - SOUND LEVEL - COOLING CAPACITY							
	Min.*		50 Pa/ 30 dB (A)			150 Pa/ 35 dB (A)		
	l/s	m ³ /h	l/s	m ³ /h	P Δt=8K W	l/s	m ³ /h	P Δt=8K W
160	5	18	72	260	694	75	270	722
250	10	36	105	378	1011	120	432	1156

*The product can regulate below min. but the measurement accuracy cannot be guaranteed. For tolerances, see page 4. Note: For a high pressure drop across the product, it may be difficult to reach the min. flow, see the sizing diagrams.

Technical description

General

- Designed for demand-controlled ventilation of premises with a varying load.
- Designed for comfort ventilation.
- Moist, cold and aggressive environments must be avoided.
- Designed for supply air systems.
- Pressure-independent, but does require a minimum pressure drop equivalent to that of an open damper.
- The minimum air flow must be considered during planning.

Design

- Integrated air flow sensor.
- Integrated duct temperature sensor.
- Integrated room temperature sensor.
- Integrated occupancy sensor.
- Integrated LED.
- Possibility to connect up to 3 valve actuators.
- Connection: Ø160 or Ø250.
- Always supplied with commissioning box and dust protection.
- The air diffuser has Easy Access.
- The air diffuser has the square dimensions 595x595 mm, which makes it easy to fit in modular suspended ceilings with the modular measurements 600x600 mm.

Functions

- Variable or constant flow regulation.
- Measurement of air flow, temperature and occupancy.
- Status indication via LED.
- Wireless communication via radio.
- Heating and cooling function with air.
- External heating control.

Materials and surface treatment

Air diffuser

- The connection spigot is made of galvanized sheet steel (Z275).
- Standard colour white RAL 9003, gloss 30.
- Other metal parts are powder coated sheet steel.

Commissioning box

- All sheet-metal parts are galvanized sheet steel (Z275).
- Internal sound-absorbing material is made of PET (polyethylene terephthalate), fire rating: B-s1, d0.



Accessories

- POWER Adapt, transformer for power supply.
- ACTUATOR, valve actuator for heating regulation with e.g. radiators.
- ADAPTER for visible T-bars in modular suspended ceiling systems. Suitable for lay-in ceilings, e.g. 625x625 or 675x675.

Project design / Typical room

See the separate documentation "WISE System Guide", which is available for download via www.swegon.com.

Maintenance

The product does not require any maintenance/service, except for any cleaning when necessary. See the separate Instructions for Use, available on www.swegon.com.

Environment

The Building Materials Declaration is available on www.swegon.com.

Technical data

Output (ERP):	50 mW
Frequency band:	2.45 GHz, IMS band (2400-2483 MHz)
Temperature sensor:	0 - 50°C ± 0.5°C
Pressure sensor:	0 - 300 Pa
Flow tolerance:	Q±5%, however at least ±2 l/s
Detection range:	See Figure 1.
IP class:	IP20
Corrosivity class:	C3
Leakage class casing according to SS-EN 1751:	C
Running time open/close:	110 s
Ambient temperature	
Operation:	0 – 50°C
Storage:	-20 – +50°C
RH:	10 - 95% (non-condensing)
CE marking:	2016/42/EC (MD) 2014/53/EU (RED) 2011/65/EU (RoHS2)

Electrical data

Power supply:	24V AC ±15% 50 - 60Hz
Connections pipe dim.	
Power:	Screw terminal max. 2.5mm ²
Valve actuator:	Push-in spring force connections, max. 1.5 mm ²
Max. power consumption:	See table below

Variant	VA			
	Standard	+1 valve actuator	+2 valve actuator	+3 valve actuator
Ø160, Ø250	8	15	22	29

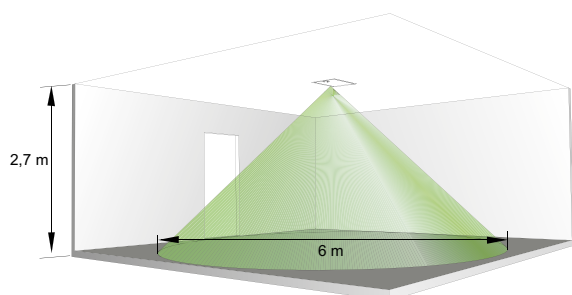


Figure 1. WISE Kite CR, detection range.

Sizing

- Sound pressure level dB(A) applies to rooms with an equivalent sound absorption area of 10 m².
- Sound attenuation (ΔL) below is shown in the octave band. Orifice attenuation is included in the values.
- To calculate the air stream diffusion, air velocities in the occupied zone or sound levels in rooms with other dimensions, please refer to our calculation software available on www.swegon.com.

Air flow

- Important! Increased air flow gives increased duct velocity and increased sound level.

Sound data

Sound power level

- The diagrams show the a-weighted sound pressure level (L_{P10A}-dB), as a function of the air flow and total pressure drop across the air diffuser product.
- Correct L_{P10A} with correction factor K_{ok} from the tables below to obtain the sound power levels for each octave band (L_W = L_{P10A} + K_{ok}).

Correction factors for conversion to sound power in octave bands:

L_W = Sound power level

L_{P10A} = A-weighted sound pressure level in the sizing diagram for air diffuser product.

K_{ok} = Correction for producing the L_W values in the octave band

Sound power level in octave bands

$$L_W = L_{P10A} - K_{ok}$$

Correction factor, K_{ok}

Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160	-2	2	-3	-7	-9	-11	-12	-5
250	0	4	-1	-4	-4	-7	-10	-5
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL

Table ΔL

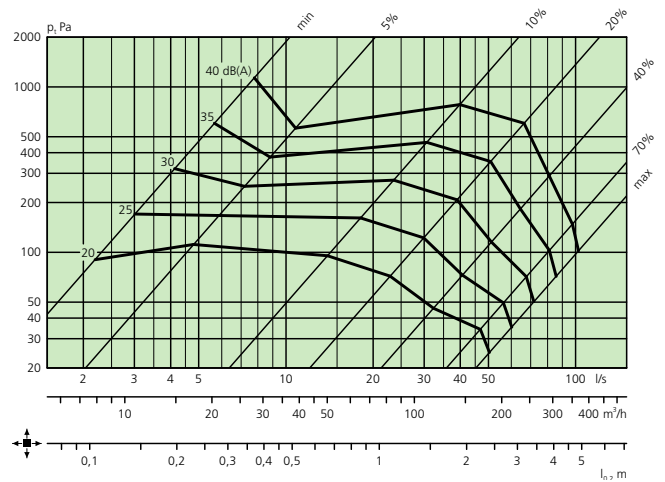
Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160	15	9	9	20	19	15	16	14
250	13	8	10	19	16	13	16	16
Tol. ±	2	2	2	2	2	2	2	2

Sizing diagram

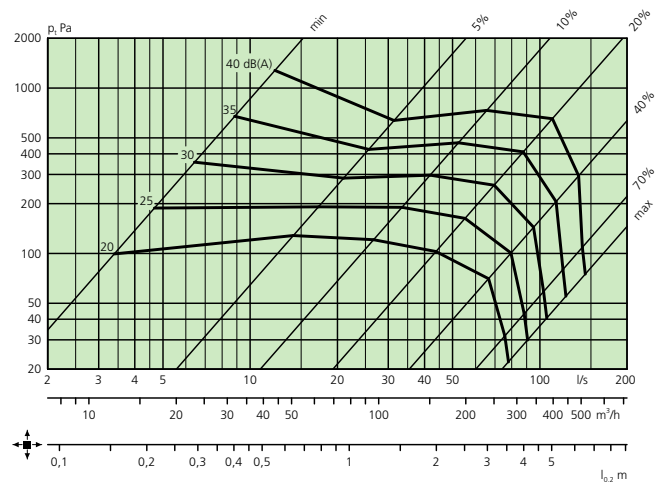
Air flow – Pressure drop – Sound level – Throw length

- Specified sound levels, L_{P10A}: 20, 25, 30, 35, 40.
- Sound pressure level dB(A) is applicable to rooms with an equivalent sound absorption area of 10 m² (4 dB room attenuation).
- The throw length L_{0.2} is measured under isothermal discharge conditions.
- Throw length based on rotation setting.
- The recommended max. permissible temperature below room temperature is 12 K.
- 100% corresponds to the damper being fully open.
- The dB(C) value is normally 6-9 dB higher than the dB(A) value.

WISE Kite CR 160



WISE Kite CR 250



Installation, dimensions and weights

Size	Dimensions (mm)				
	A	B	C	ØD	Ød
160	595	504	332	159	250
250	595	622	388	249	315

Size	Dimensions (mm)					Weight (kg)
	E	F	G	H	K	
160	284	201	184	450	100	8.2
250	383	300	237	575	140	10.9

CL = Centreline

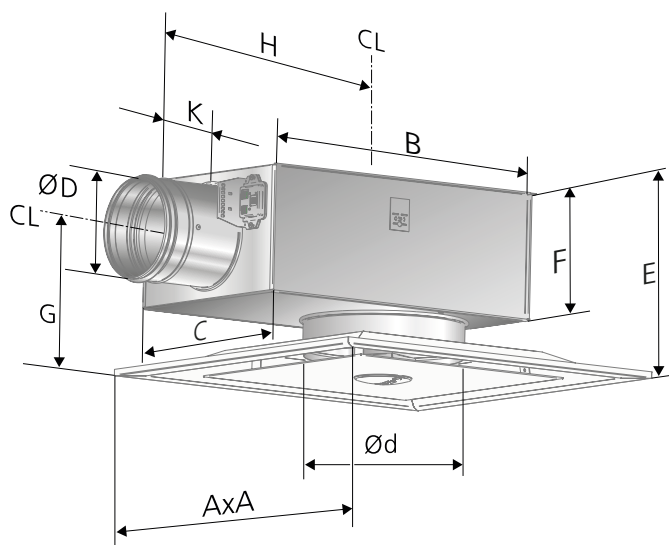


Figure 2. WISE Kite CR, dimensional figure.

Installation

- WISE Kite CR air flow measurement requires a straight section before the product according to the installation figures.
- Avoid installing the product above/near a heat source, for example, luminaires.
- Instructions for Use are supplied with the product on delivery, but can also be downloaded from www.swegon.com.

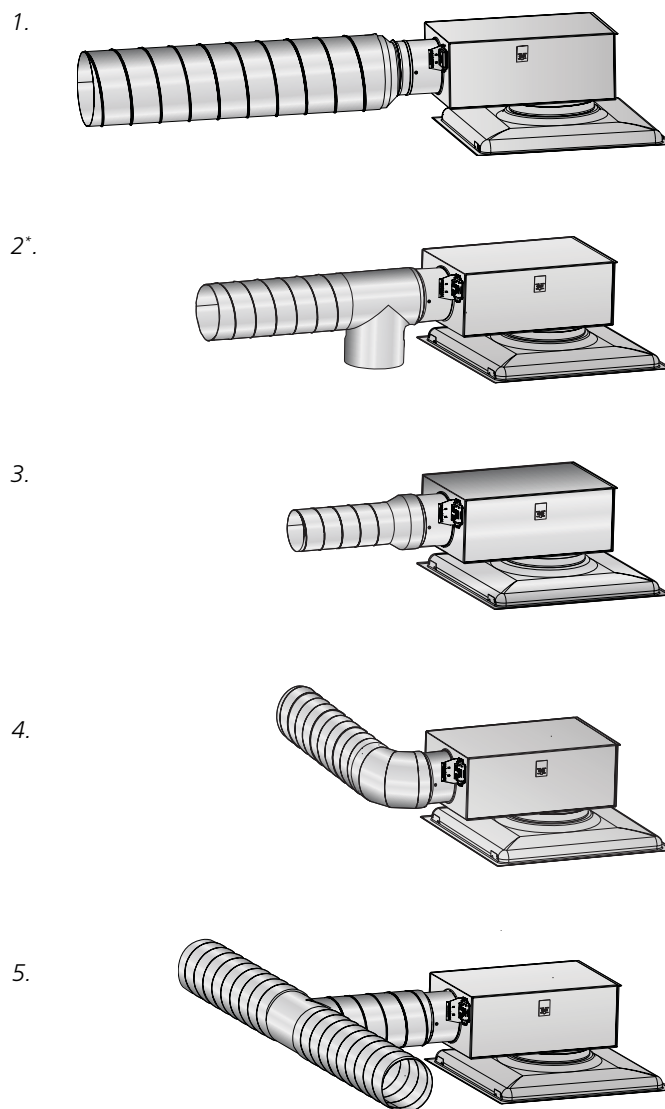


Figure 3. Straight section requirements, circular ducts.

1-3: Quantity Ø before the product: 0 x Ø.

4: Quantity Ø before the product: 1 x Ø.

5: Quantity Ø before the product: 2 x Ø.

*Cleaning hatch

Specification

Product

Rectangular active air diffuser for ceilings WISE Kite CR a xxx

Version:

Connection dimensions Ø: 160, 250

Accessories

1-Phase protective transformer POWER A a xxx

Version:

Size (VA): 20*, 60 **, 150**

*Plug contact

**Permanent installation

Valve actuator ACTUATOR c xxx yy

Version:

Options: 24V, 0-10V

Type: NC, NO*

*Only applies to 24 V

Adapter for suspended ceiling cassette ADAPTER
See specification in separate product sheet

Specification text

Example of specification text according to VVS AMA.

QMC.2 Supply air diffuser mounted in the ceiling
Square slot diffuser for ceiling interconnected with commissioning box and fixed distribution pattern.

Make: Swegon

Type: WISE Kite Ceiling

Square supply air diffuser with commissioning box for integrated installation in suspended ceilings for Swegon's WISE system, with the following functions:

- Pressure independent VAV unit for demand-controlled ventilation.
- Designed for modular suspended ceilings (600x600 mm).
- Easy Access for quick access to the commissioning box and the duct system.
- Built-in sensors for duct temperature and, room measurement, flow measurement and occupancy control.
- Integrated regulator, flow regulated function.
- Wireless communication in Swegon's demand-controlled indoor climate system WISE.

Must be installed with a minimum straight duct section on the inlet side as stated in relevant product sheet.

Size: Ø 160
Ø 250

Specification

Power supply: 24V AC ±15% 50 - 60Hz

Air tightness class, casing: C

Corrosivity class: C3

Tolerance flow measurement: ±5%, however at least ±2 l/s

Type: WISE Kite CR a xxx xx pcs

Accessories

Transformer for power supply POWER A a xxx xx pcs

Valve actuator for heating regulation ACTUATOR c xxx yy xx pcs

Adjustment frame for suspended ceilings ADAPTER a -b-ccc xx pcs