

WISE Kite Ceiling

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



QUICK FACTS

- Variable or constant flow regulation
- Available with circular slot diffuser face (WISE Kite CC SMB) or square slot diffuser face (WISE Kite CR SMB)
- Wireless communication via radio
- Integrated sensors
- Fast and simple installation and maintenance with the Easy Access function
- May be adapted to a variety of suspended ceiling systems
- Variants:
 - Connection Ø160 or Ø250

WISE Kite Ceiling Size	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 3. 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

- Diffuser face in circular (WISE Kite CC SMB) or square design (WISE Kite CR SMB).
- Integrated air flow sensor.
- Integrated duct temperature sensor.
- Integrated room temperature sensor.
- Integrated presence sensor.
- Integrated LED.
- Possibility to connect up to 3 valve actuators.
- Connection: Ø160 or Ø250.
- Supplied with 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.
- On request, the air diffuser can be adapted to a variety of suspended ceilings, e.g. Focus Dg, Focus Ds, Focus E and Dampa. The air diffuser can also be adapted to other dimensions for lay-in, e.g. 610x610, 625x625 and 675x675.

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 galvanised sheet steel (Z275).
- The diffuser face is made of sheet steel and galvanised 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 galvanised 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.

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:	24 V AC ±15% 50 – 60 Hz
Connections pipe dim.	
Power:	Push-in spring force connections max. 2.5 mm 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

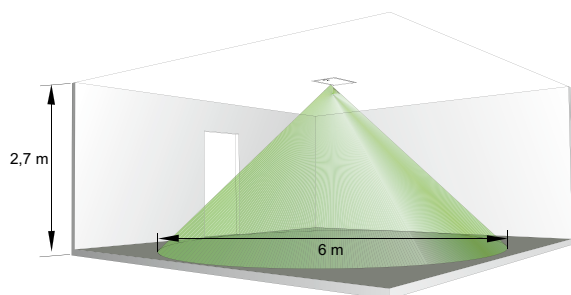


Figure 1. WISE Kite Ceiling, detection range.

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

- Note: 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

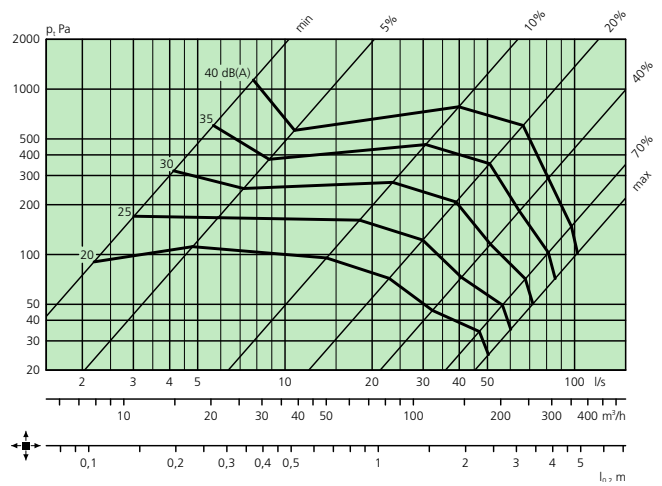
Size	Mid-frequency (octave band) Hz							
	63	125	250	500	1000	2000	4000	8000
160	15	9	9	20	19	15	16	14
250	13	8	10	19	16	13	16	16
Tol. ±	2	2	2	2	2	2	2	2

Sizing diagram

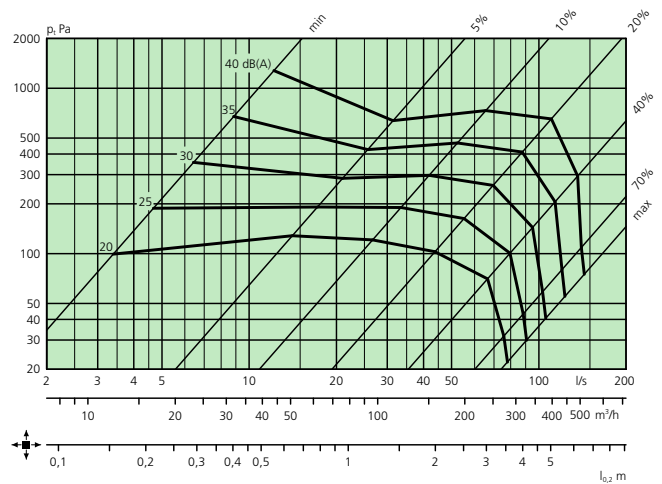
Air flow – Pressure drop – Sound level – Throw length

- 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.
- 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 Ceiling 160



WISE Kite Ceiling 250



Installation, dimensions and weights

WISE Kite CC SMB

Size	Dimensions (mm)										Weight (kg)
	A	B	C	ØD	Ød	E	F	G	H	K	
160	595	504	332	159	250	292	201	192	450	100	8.3
250	595	622	388	249	315	391	300	245	575	140	11.1

CL = Centreline

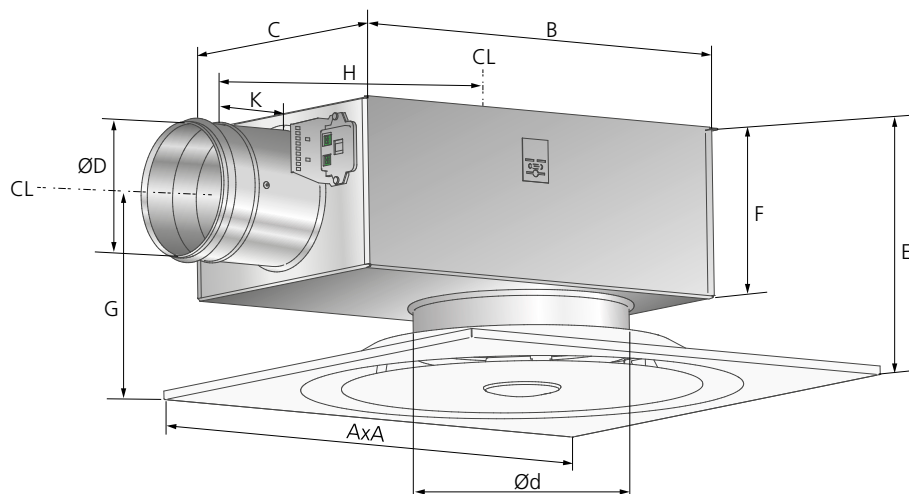


Figure 2. WISE Kite CC SMB, dimensional figure.

WISE Kite CR SMB

Size	Dimensions (mm)										Weight (kg)
	A	B	C	ØD	Ød	E	F	G	H	K	
160	595	504	332	159	250	284	201	184	450	100	8.2
250	595	622	388	249	315	383	300	237	575	140	10.9

CL = Centreline

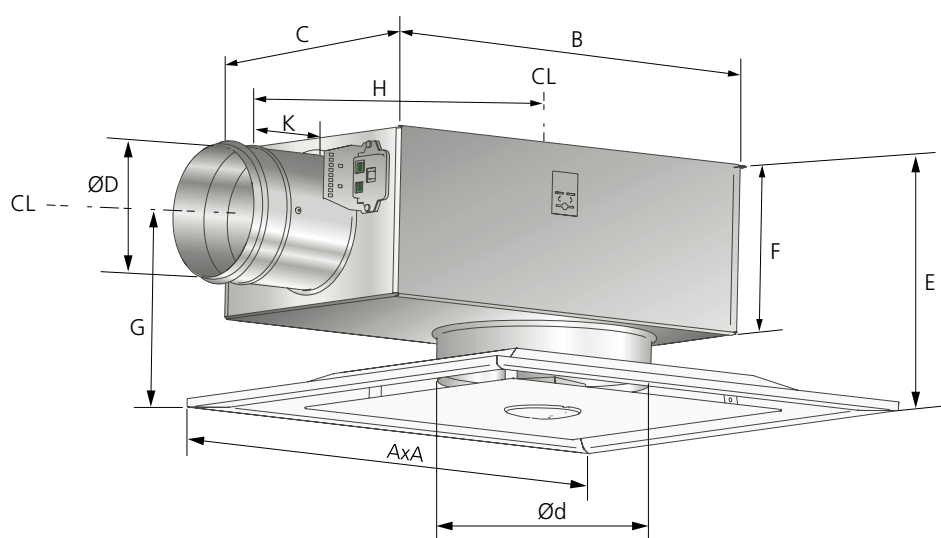


Figure 3. WISE Kite CR SMB, dimensional figure.

Installation

- WISE Kite Ceiling 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 on delivery of the WISE ALS commissioning box, but can also be downloaded from www.swegon.com.

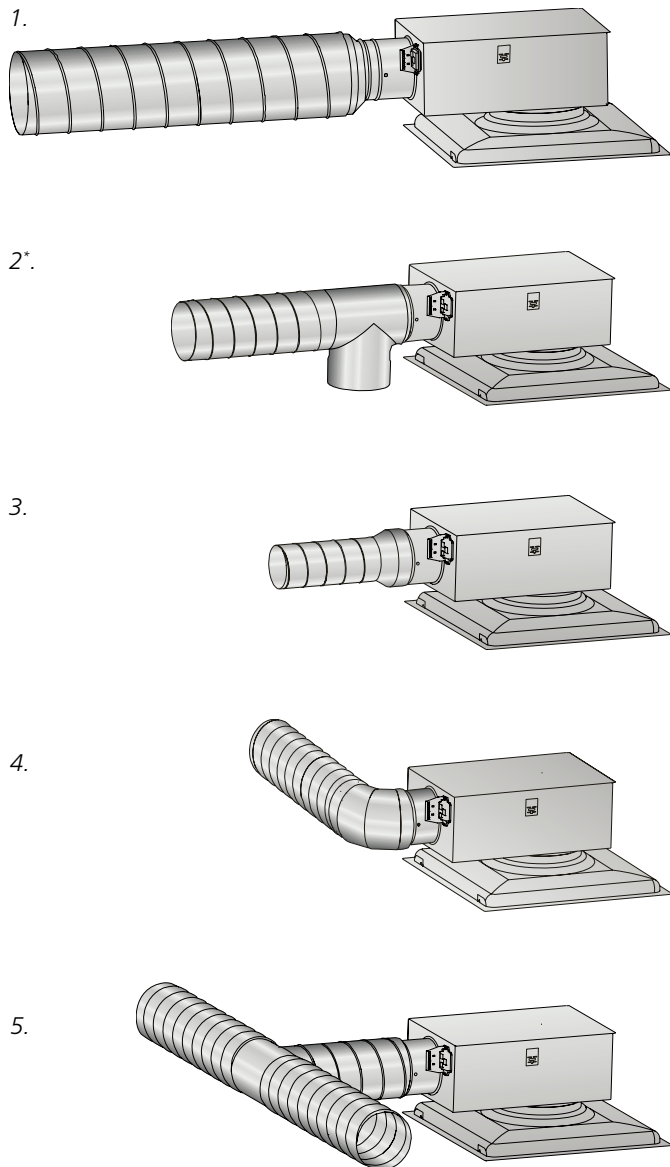


Figure 4. Straight duct section requirements in circular ducts.

1-3: Quantity \emptyset before the product: $0 \times \emptyset$.

4: Quantity \emptyset before the product: $1 \times \emptyset$.

5: Quantity \emptyset before the product: $2 \times \emptyset$.

*Cleaning hatch

Specification

Article bundle

Commissioning box incl. ceiling diffuser

Square active air diffuser for ceilings WISE Kite XX SMB a aaa

Version:
CC: Circular slot diffuser face
CR: Square slot diffuser face

With SMB

Version:

Connection dimensions Ø: 160, 250

Product

Commissioning box

Active commissioning box for ceiling diffusers WISE ALS a aaa-bbb

Version:

aaa = Duct connection (ØD)
bbb = Air diffuser connection (Ød)

Connection dimensions Ø: 160-250, 250-315

Ceiling diffuser

Square ceiling diffuser KITE XX SMB a bbb -ccc

Version:
CC: Circular slot diffuser face
CR: Square slot diffuser face

With SMB

Version:

Size: 250, 315

Nom. square dimension, mm: 600

Accessories

POWER Adapt

1-Phase protective transformer POWER A a xxx

Version:

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

*Plug contact

**Permanent installation

ACTUATOR

Valve actuator ACTUATOR c xxx yy

Version:

Options: 24 V, 0-10 V

Type: NC, NO*

*Only applies to 24 V

Specification text

Example of specification text according to VVS AMA.

QMC.2 Supply air diffuser mounted in the ceiling
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:

- Diffuser face in circular (WISE Kite CC SMB) or square design (WISE Kite CR SMB).
- 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, room temperature, flow measurement and occupancy control.
- Integrated regulator, flow-regulating 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 the catalogue data.

Size: Ø 160
Ø 250

Specification

Power supply: 24 V AC ±15% 50 – 60 Hz

Air tightness class, casing: C

Corrosivity class: C3

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

Type: WISE Kite CC SMBa xxx xx pcs
WISE Kite CR SMBa 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