



FUNCTION

IN:LINE is a linear slot diffuser for aesthetic integration in Gyproc's IN: ceilings. The diffuser is suitable for either constant or variable airflow. It is capable of supplying air at large under temperatures and the supply air direction is adjustable.

QUICK FACTS

- Suitable for CAV/VAV
- Large induction effect
- Flexible supply air direction, 0° to 180°
- Simultaneous horizontal/vertical spread option
- Integrated regulation and measurement function

QUICK GUIDE

AIR FL	0 W - S O U	NDLEVE	L
		l/s	
Size	25 dB(A)	30 dB(A)	35 dB(A)
IN:LINE 2-1040	42	51	63
IN:LINE 2-1640	74	89	110

Data applies for two-way supply and half-open damper.



1



Registered design. The company reserves the right to make design changes without prior notice.

DESIGN

IN:LINE is a linear supply air diffuser with two air slots. Each slot is equipped with a deflector that can be easily adjusted by hand between 0° and 180° to provide the desired supply air direction, se figure 1. IN:LINE is designed to be mounted in a SLAT 1a plenum box, which has a commissioning damper and an airflow measuring device. SLAT 1a has a sound absorbent layer on the inside.

MATERIALS AND SURFACE TREATMENT

IN:LINE is manufactured in aluminium and finished with our pure white standard paint, RAL 9010.

SLAT 1a is manufactured in galvanized sheet steel. The sound absorbent is made from polyester with a reinforced surface layer.

INSTALLATION (See figure 2)

The commissioning box has mounting brackets and is suspended from the ceiling. The diffuser section is screwed to the commissioning box through the perforated plates.

PLANNING

IN:LINE is available in two lengths, 1040 mm and 1640 mm, to allow flexible planning. A rule of thumb for choosing IN:LINE diffusers is to use one diffuser for each 15 m² of floor area. IN:LINE 2-1640 supplies approx 70% more air than IN:LINE 2-1040 at the same sound level. The throw length for IN:LINE 2-1640 is about 30% shorter than for IN:LINE 2-1040 at the same airflow. See also the technical data section in our Indoor Climate Systems 2005 catalogue to find the minimum spacing between supply air diffusers.

For project planning and sizing IN:LINE air diffusers, we recommend that you get in touch with Swegon.

COMMISSIONING

Commissioning must be carried out with the diffuser section fitted in place. The measurement tube and damper cords are pulled outside the diffuser through the slots. When the pressure measurements are complete and the damper position has been determined, the two damper cords are stretched and joined in a commissioning knot. The cords are then wound around the cord locking screw, which is then tightened. The k-factor is stated on the product label and in the relevant commissioning guide, which is available on our website.

MAINTENANCE

The diffuser should be cleaned as necessary using lukewarm water and washing-up liquid. Access can be gained to the duct system by removing the diffuser section and damper unit.

ENVIRONMENT

The declaration of construction materials is available from our website or can be ordered from one of our sales offices.



Figure 1. Spread pattern.



Figure 2. Installation.

Examples

The following are some extreme examples where a room has a glazed exterior wall. The examples have been modelled using CFD simulations and are only valid under certain conditions. The supply airflow is shown schematically in the example rooms for a final airflow of 0.2 m/s.

Office 12.6 m², one person

Length:	3.0 m
Width:	4.2 m
Height:	2.7 m
Supply air terminal	Single IN:LINE 2-1640
Airflow:	$60 \text{ I/s} = 4.8 \text{ I/s} \text{ m}^2$
Δt:	8.5°C
Cooling ca- pacity:	49 W/m ²



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Figure 3. Office. Air diffusers arranged parallel with the exterior wall.

Open-plan office 25 m², four persons

Length:	6.0 m
Width:	4.2 m
Height:	2.7 m
Supply air terminal:	Two IN:LINE 2-1640
Airflow:	$120 \text{ I/s} = 4.8 \text{ I/s} \text{ m}^2$
Δt:	8.5 °C
Cooling ca- pacity:	49 W/m ²



Figure 4. Open-plan office. Air diffusers arranged parallel with the exterior wall.

Open-plan office 25 m², four persons

Length:	6.0 m
Width:	4.2 m
Height:	2.7 m
Supply air terminal:	Two IN:LINE 2-1640
Airflow:	$120 \text{ I/s} = 4.8 \text{ I/s} \text{ m}^2$
Δt:	8.5 °C
Cooling ca- pacity:	49 W/m ²



Figure 5. Open-plan office. Air diffusers arranged perpendicular to the exterior wall.







Figure 7. Entrance / Lobby.

Conference room 25 m², eight people

Length:	6.0 m
Width:	4.2 m
Height:	2.7 m
Supply air terminal:	Two IN:LINE 2-1640
Airflow:	$120 \text{ I/s} = 4.8 \text{ I/s} \text{ m}^2$
Δt:	8.5°C
Cooling ca- pacity:	49 W/m ²

Entrance / Lobby 53 m²

Length:	8.4 m
Width:	6.3 m
Height:	2.7 m
Supply air terminal:	Two IN:LINE 2-1640
Airflow:	$180 \text{ l/s} = 5.4 \text{ l/s} \text{ m}^2$
Δt:	8.5°C
Cooling ca- pacity:	35 W/m ²

TECHNICAL DATA

- Sound level dB(A) is valid for rooms with 10 m² equivalent sound absorption area.
- Throw length ${\rm I}_{\rm 0.2}$ is measured with isothermal air supply.
- Recommended maximum under temperature 10°C.

Sound data - IN:LINE - Supply air

Sound power level $\rm L_w(dB)$ Table $\rm K_{OK}$

Size		Mid-frequency (octave band) Hz						
IN:LINE	63	125	250	500	1000	2000	4000	8000
2-1040 1-way	1	7	9	-2	-5	-7	-12	-12
2-1040 2-way	0	7	7	-2	-4	-5	-10	-11
2-1640 1-way	2	9	10	0	-4	-9	-13	-11
2-1640 2-way	-1	8	8	0	-4	-7	-10	-11
Tol. ±	2	2	2	2	2	2	2	2

Sound attenuation ΔL (dB) Table ΔL

Size		Mid-frequency (octave band) Hz						
IN:LINE	63	125	250	500	1000	2000	4000	8000
2-1040 1-way	21	13	13	18	15	13	19	17
2-1040 2-way	21	13	13	18	15	13	19	17
2-1640 1-way	22	16	15	20	18	14	21	18
2-1640 2-way	22	16	15	20	18	14	21	18
Tol. ±	2	2	2	2	2	2	2	2

Engineering graphs - IN:LINE - Supply air

Airflow - Pressure drop - Sound level - Throw

- The graphs refer to data for IN:LINE flush-mounted in ceiling.
- The graphs must not be used for commissioning.
- The dB(A) values are for rooms with normal acoustic absorption (about 4 dB).
- The dB(C) value is normally 6–9 dB higher than the dB(A) value. For more accurate calculations see the calculation template in the chapter on Acoustics in the technical section of the catalogue.

IN:LINE 2-1040 1-way supply air







- The throw I_{0,2} is specified as the maximum distance from the center of the air diffuser to the 0.2 m/s isovel with iso-thermal air supply in an "infinitely" large room.
- If air cooler than room temperature is supplied to smaller rooms, in most cases the throw will be substantially shorter. The examples illustrated in Figures 3 to 6, based on full-scale tests and CFD simulations, show that the actual throw will be 70-80% of the specified I_{0.2} -value.

IN:LINE 2-1040 2-way supply air







DIMENSIONS AND WEIGHT

IN:LINE

Size	L	kg
2-1040	1040	13.0
2-1640	1640	20.0





ORDER KEY

Product designation

Linear slot diffuser IN:LINE 2-bbbb

Length: 1040, 1640 Product range IN:LINE 2:1040 IN:LINE 2:1640

Commissioning box: SLAT 1a always included.

SPECIFICATION EXAMPLE

Swegon's linear slot diffuser, type IN:LINE for ceiling installation in GYPROC's IN: ceiling system, complete with SLAT 1a commissioning box and having the following functions:

- 100% flexible spread pattern
- Individually adjustable deflectors
- Powder coated in white
- Cleanable
- Commissioning box with removable commissioning damper with lockable controls, measurement function with low method error and interior sound absorbent with reinforced surface layer

Size	IN:LINE 2-1040	xx items
	IN:LINE 2-1640	xx items

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