



AIR TECH
SYSTEMS

Technical brochure

LTG Fans

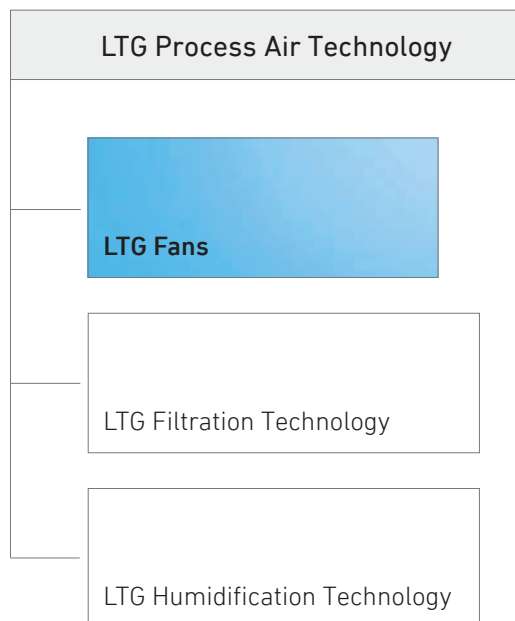
Fahrtwind-Simulators*

Series VRSF / VAF



* Fahrtwind = wind generated by a moving vehicle

www.LTG-Inc.net



COMMENT

Dimensions in this technical documentation are given in inches (mm).

General tolerances according to DIN ISO 2768-cl apply.

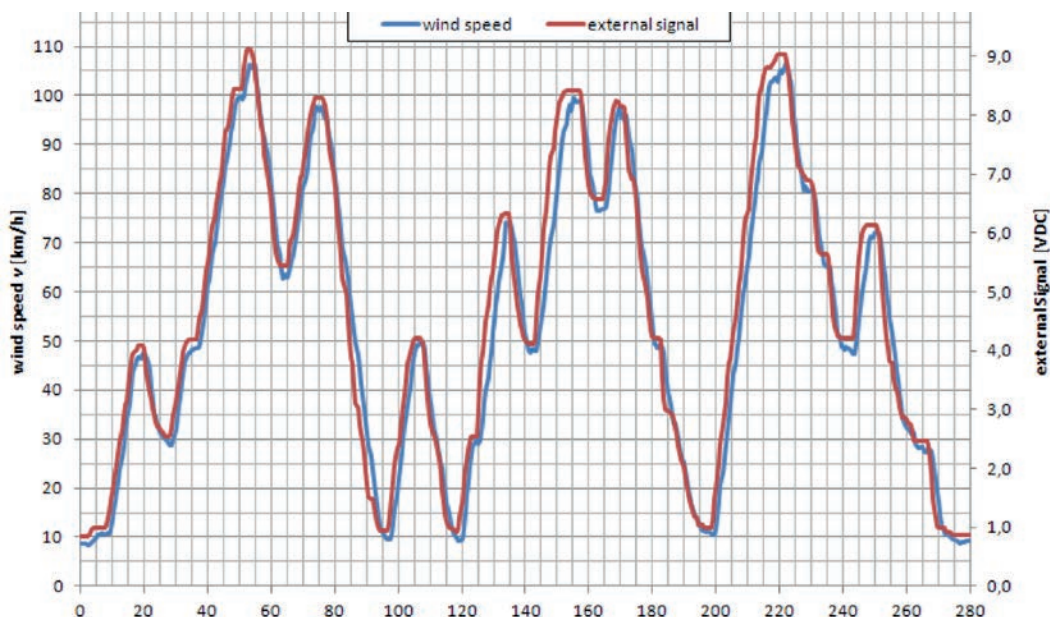
The technical documents include technical brochures, operating and maintenance instructions, technical data sheets, the order documents and the rating plate.

Special designs on request.

PRODUCT OVERVIEW

Type	Max. outlet velocity	Outlet area H x W	Air outlet height above floor	Air volume at nominal speed	Ambient temperature	Motor output	Mobile	fulfilled requirements	Page
	[mph] (km/h)	[inch] (mm)	[inch] (mm)	[cfm] (m ³ /h)	[°F] (°C)	[hp] (kW)			
VRSF 1120 E4030	60 (96)	39.4 x 67 (1000 x 1700)	6 - 18 (150 - 450)	96 000 (163 200)	-40 to +122 (-40 to +50)	121 (90)	no	SC03, CFR	8/9
	85 (137)	31.5 x 39.4 (800 x 1000)	8 - 20 (200 - 500)	64 500 (109 600)	-40 to +122 (-40 to +50)	121 (90)	no	CFR	
	90 (145)	31.5 x 39.4 (800 x 1000)	8 - 20 (200 - 500)	68 300 (116 000)	+14 to +122 (-10 to +50)	121 (90)	no	CFR	
	84 (135)	23.6 x 39.4 (600 x 1000)	8 - 20 (200 - 500)	47 700 (81 000)	-40 to +122 (-40 to +50)	121 (90)	no	WLTP	
VRSF 1120 E3961	100 (160)	39.4 x 31.5 (1000 x 800)	2 (50)	75 300 (128 000)	+14 bis +113 (-10 to +45)	215 (160)	yes	RDE, WLTP	10/11
VAF 2x1120 E4004	60 (96)	39.4 x 67 (1000 x 1700)	6 (150)	96 000 (163 200)	+50 bis +104 (+10 to +40)	169 (126)	no	SC03, CFR	12/13
VAF 2500 E3934	112 (180)	43.3 x 78.7 (1100 x 2000)	8 - 20 (200 - 500)	235 400 (400 000)	+32 bis +104 (0 to +40)	362 (270)	no		14/15
VAF 2240 E3949/ E3904	100 (160)	39.4 x 78.7 (1000 x 2000)	8 - 20 (200 - 500)	188 300 (320 000)	+32 bis +104 (0 to +40)	335 (250)	no		16/17
VAF 2240 E3794	90 (145)	70.9 x 41.3 (1800 x 1050)	4 (100)	159 000 (270 000)	+50 bis +104 (+10 to +40)	335 (250)	no		18/19
VAF 2240 E3847	90 (145)	39.4 x 78.7 (1000 x 2000) 360° rotatable	-	170 500 (290 000)	+14 to +104 (-10 to +40)	335 (250)	no		20/21
VAF 1400	60 (100)	28 x 55.1 (715 x 1400)	5 (125)	59 000 (100 000)	+50 bis +104 (+10 to +40)	74 (55)	yes		22/23

REACTION TIME OF THE LTG FAHRTWIND-SIMULATORS



The figure above shows a driving cycle, which exemplifies how fast the LTG Fahrtwind-Simulators follow the required speed (not valid for all types).

At the reference signal of 0 V a minimal flow of 1.24 - 4.35 mph (2 - 7 km/h) results from the standby drive depending on the type.

ALREADY USED BY LEADING CAR MANUFACTURERS



Application example: Audi, type VAF 2240



Application example: Audi, type VAF 2240

ALREADY USED BY LEADING CAR MANUFACTURERS



Application example: Audi, type VAF 2500

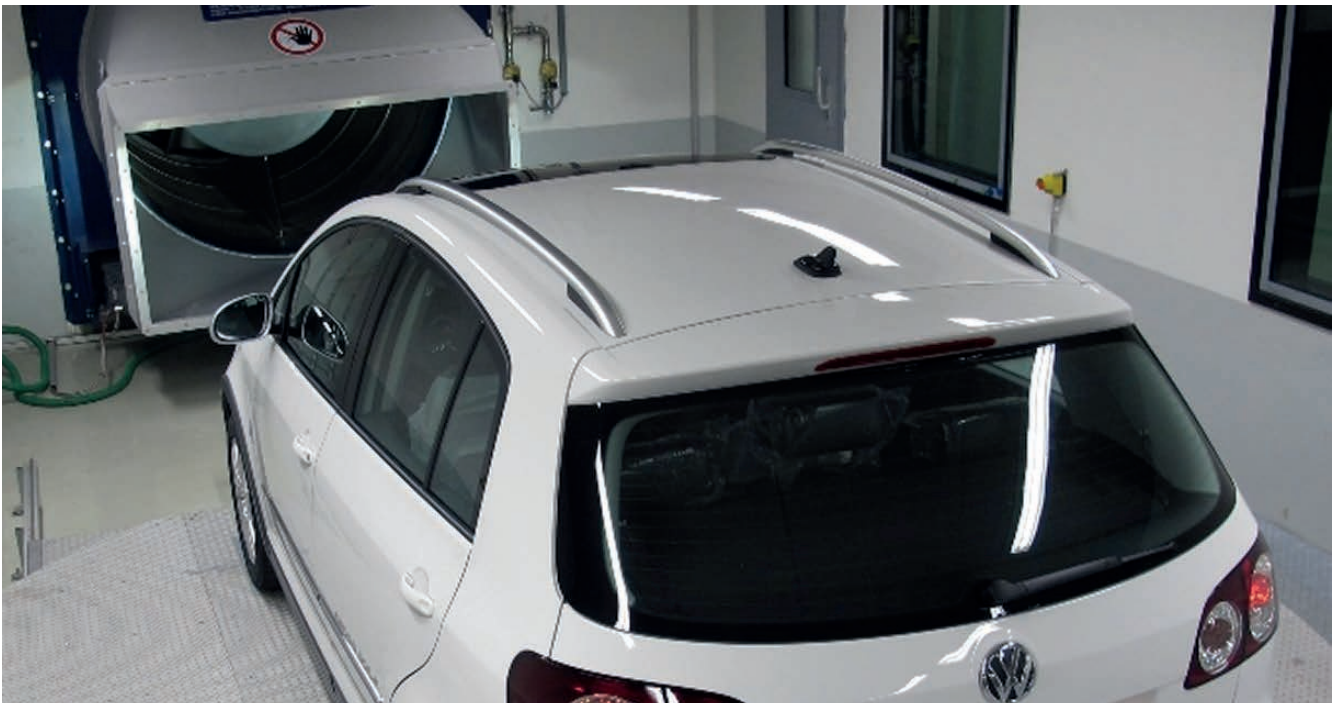


Application example: Audi, type VAF 2500

ALREADY USED BY LEADING CAR MANUFACTURERS



Application example: Volkswagen, type VAF 2240



Application example: Volkswagen, type VAF 2240

APPLICATION

LTG Fahrtwind-Simulators have been specially designed for use in test dynamometers of the automotive industry, test labs in mechanical and process engineering, and for certification organizations. They can however also be used universally for other cooling or incoming-flow simulations, to ensure quality assurance during development, service and final testing.

One of the main features of the LTG Fahrtwind-Simulators is the use of high-performance fans in centrifugal or axial design with the following advantages:

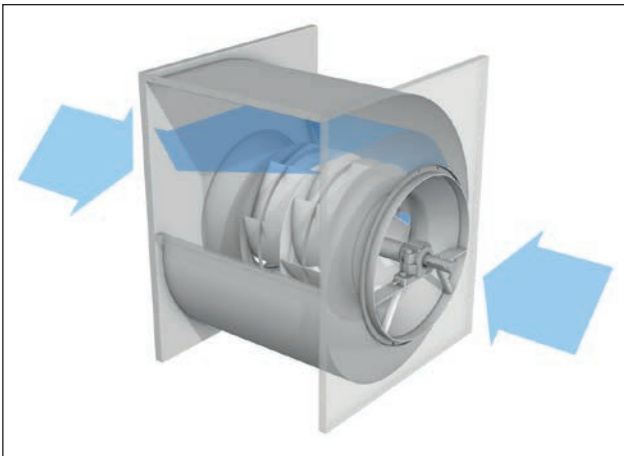
- High degree of efficiency up to 89 %
- Quiet operation due to optimized impeller and housing design
- Optimum aerodynamic characteristics

FUNCTIONAL PRINCIPLE

Centrifugal Fans

With LTG Fahrtwind-Simulators with a centrifugal fan the air is sucked in at the side, in the middle of the impeller. The impeller rotation results in a radial air acceleration, which over the fan housing at the air outlet opening into a directed air flow is converted. The air flow is controlled by means of a rectifier evened out over the air outlet area.

Other air speeds are set by speed control and can be done from the operators room.



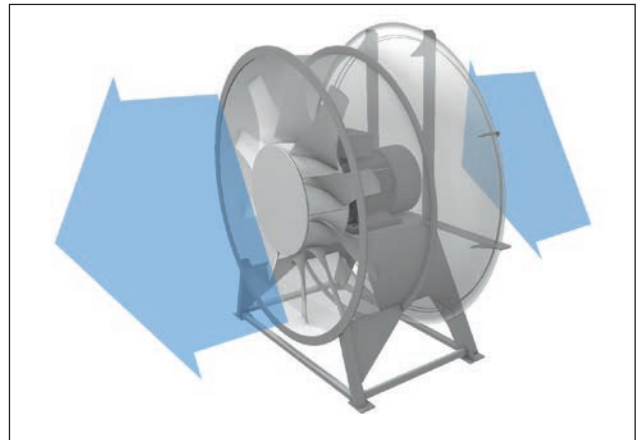
Principle of flow through centrifugal fan

Axial Fans

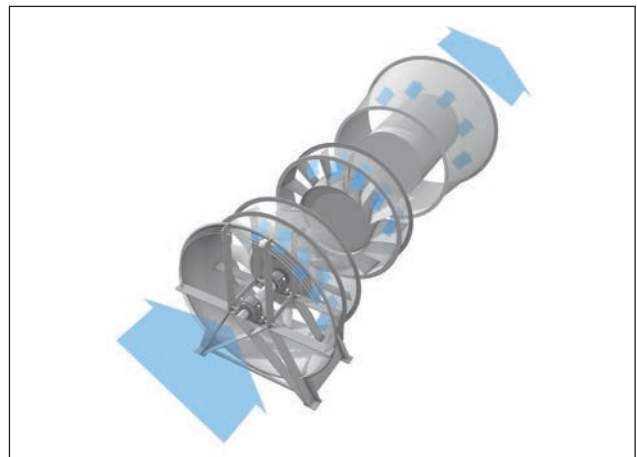
The axial fan of the LTG Fahrtwind-Simulator pulls in air from the surroundings or from a duct.

The adjoining flow channel concentrates the airflow and diverts it depending on the situation. The aerodynamically efficient grille at the air outlet ensures an even airflow.

Other air speeds are set by speed control and can be done from the operators room.



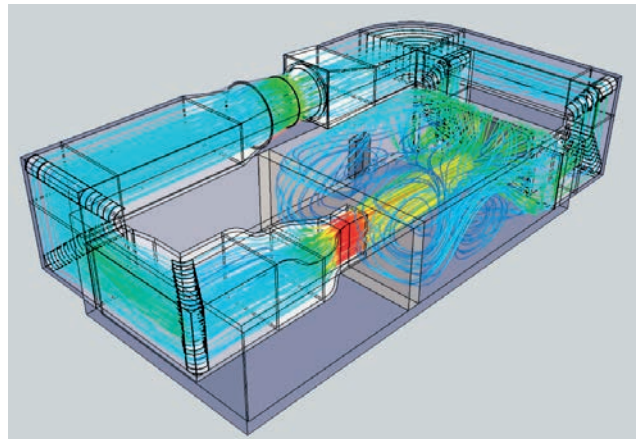
Principle of flow through axial fan



Axial fan with guide vane and diffuser

NUMERIC FLOW SIMULATIONS WITH CFD

The use of CFD - Computational Fluid Dynamics - permits the calculation and representation of the airflow for existing or planned systems and processes. The variation of a wide range of parameters helps to verify our innovative flow concepts and crucially shortens the development time.



Visualized flow in test dynamometer



LTG FAHRTWIND-SIMULATOR TYPE VRSF 1120 E4030 FOR SC03 VEHICLE TESTS IN ACCORDANCE WITH CFR § 1066

Ambient temperature -40 to +50 °C

APPLICATION

Type VRSF 1120 E4030 was developed for SC03 vehicle tests where the simulator is integrated into the test cell as a fixed installation.

With an outlet area of (HxW) 39.4 x 67 in also makes it suitable for larger vehicles, such as SUVs and transporters. The extendable air outlet nozzle allows the distance to the vehicle to be regulated accordingly.

By means of a lifting system, the simulator can be raised and thus the required air outlet height to the vehicle can be optimally adjusted.

DESIGN

The Fahrtwind-Simulator comprises a motor-powered centrifugal fan, the simulator control in a separate control cabinet, including a frequency converter, and a coloured touch panel through which the device is operated. The fan is built on a base frame with profiles for introduction by forklift truck. The extendable air outlet nozzle is delivered separately and installed in the fan unit on site. The control cabinet is intended for installation outside the air-conditioned test cell.

Optionally, an air outlet nozzle can be installed to achieve higher speeds up to max. 90 mph (145 km/h) for CFR tests and up to max. 84 mph (135 km/h) for WLTP tests.



LTG FAHRTWIND-SIMULATOR TYPE VRSF 1120 E4030 FOR SC03 VEHICLE TESTS IN ACCORDANCE WITH CFR § 1066

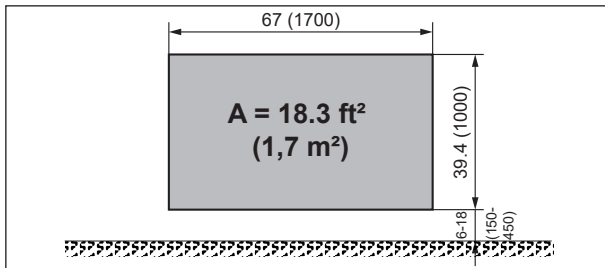
SPECIFICATIONS

- Outlet area 18.3 ft² (1.7 m²)
- High-performance centrifugal fan with high efficiency, intake openings on the left and right of the fan with protective grille
- Outlet distribution in accordance with CFR § 1066 for SC03 tests via aerodynamically optimised outlet nozzle
- Outlet nozzle mechanically adjustable, for 60 mph nozzle (SC03) by 24 in, for 90 mph nozzle (CFR§1066) by 31 in
- Continuously electrically height adjustable by 12 in
- Display on the front side
- Optional: temperature and humidity measurement in the outlet flow

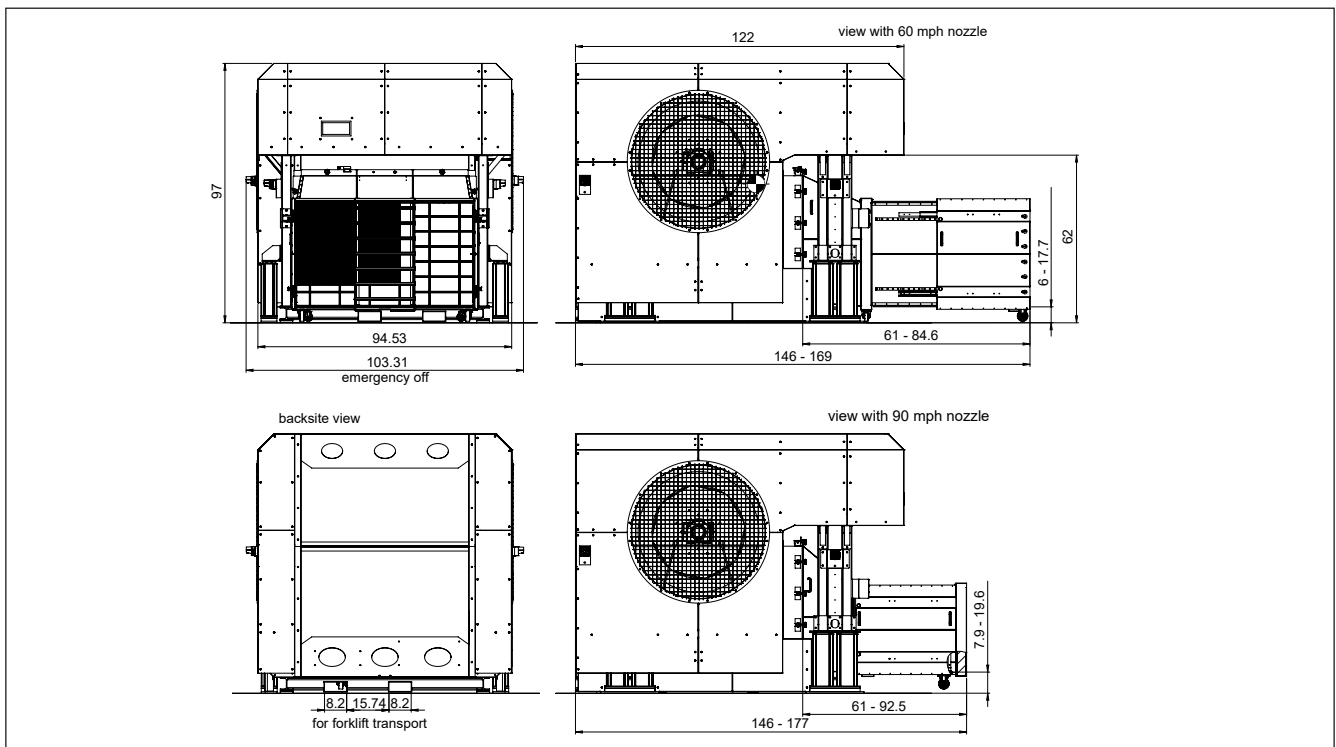
TECHNICAL DATA

Average outlet velocity at nominal speed	60 mph (96 km/h)
Air volume at nominal speed	96 000 cfm (163 200 m ³ /h)
Ambient temperature (without humidity and condensate formation)	-40 to +122 °F (-40 to +50 °C)
Motor output	121 hp (90 kW)
Outlet area	39.4 x 67 in (1000 x 1700 mm)
Nominal speed of centrifugal fan	1005 rpm
Air outlet height above floor	6-18 in (150-450 mm)

OUTLET AREA



DIMENSIONS



Further sizes available on request.

LTG FAHRTWIND-SIMULATOREN SERIES VRSF 1120 E3961 FOR VEHICLE ROLLER TYPE DYNAMOMETERS

Ambient temperature +14 to +113 °F (-10 to +45 °C), mobile

APPLICATION

The type VRSF 1120 was developed for vehicle roller type dynamometers, with little space in front of the vehicle and RDE tests are to be run.

It has a large 39.4 in (1000 mm) high outlet area, which is also very suitable for larger vehicles such as SUVs and vans.

DESIGN

The Fahrtwind-Simulator is supplied completely assembled. It consists of a centrifugal fan with direct drive, a separate control cabinet and four stable, lockable casters. As an option it can also be supplied with an electric drive.

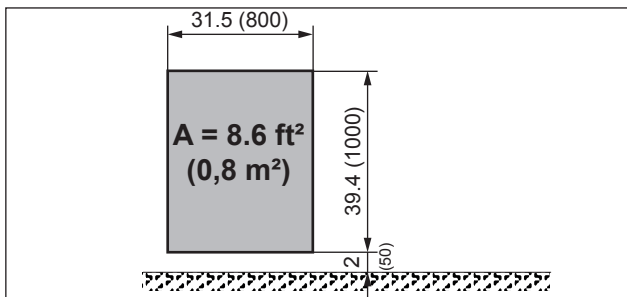


LTG FAHRTWIND-SIMULATOREN SERIES VRSF 1120 E3961 FOR VEHICLE ROLLER TYPE DYNAMOMETERS

SPECIFICATIONS

- High-performance high efficiency centrifugal fan
- Minimum space requirement due to design and aerodynamical optimized outlet nozzle
- Allows realistic RDE testing, also for large vehicles
- Electric drive as an option for flexible handling in the test cell

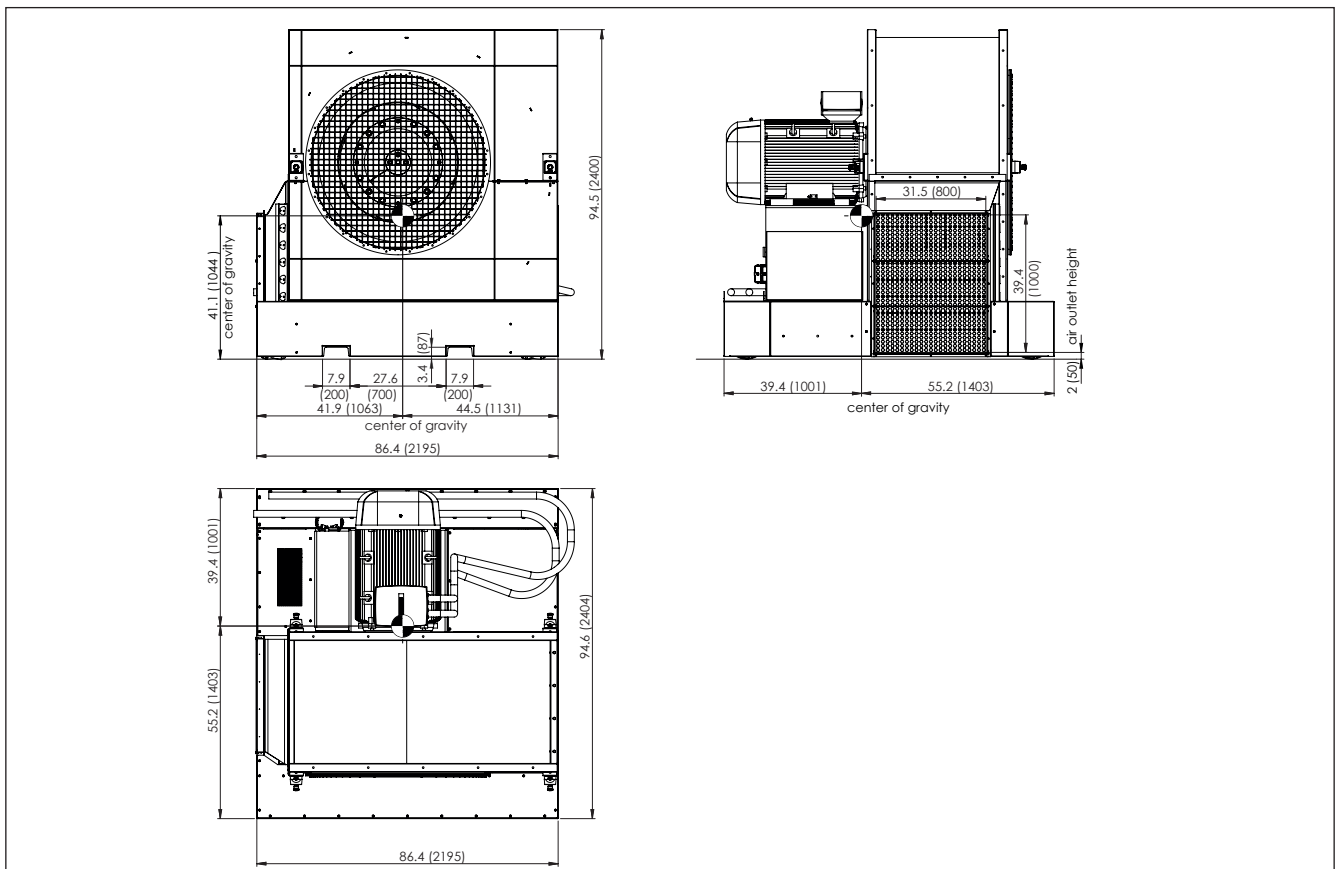
OUTLET AREA



TECHNICAL DATA

Average outlet velocity at nominal speed	100 mph (160 km/h)
Air volume at nominal speed	75 300 cfm (128 000 m³/h)
Ambient temperature (without humidity and condensate formation)	+14 to +113 °F (-10 to +45 °C)
Motor output	215 hp (160 kW)
Outlet area	39.37 x 31.5 in (1000 x 800 mm)
Nominal speed of centrifugal fan	1600 rpm
Air outlet height above floor	2 in (50 mm)

DIMENSIONS



Further sizes available on request.

LTG FAHRTWIND-SIMULATOR TYPE VAF 2X1120 E4004 FOR SC03 VEHICLE TESTS IN ACCORDANCE WITH CFR § 1066

Ambient temperature +50 to +104 °F (+10 to +40 °C)

APPLICATION

The Fahrtwind-Simulator of type VAF 2x1120 E4004 was developed for SC03 test benches with low space demand and is characterised by a compact build.

It has an outlet area of 18.3 ft² (1.7 m²) in accordance with CFR § 1066, which is achieved via a flow-optimised outlet nozzle (H x W) 39.4 x 67 in (1000 x 1700 mm).

DESIGN

The Fahrtwind-Simulator is delivered completely assembled. It comprises of a portable blower unit with two directly powered axial fans, a flange-connected airstream channel with optimised outlet nozzle, and a separate control cabinet. The blower unit can be moved within the test cell by forklift truck.

The voltage control from the control cabinet to the Fahrtwind-Simulator takes place via 2 x 150 A plugs and is activated with contactors once both plugs are connected.

Optionally, the control is equipped with active EMC filters to achieve THD(i) <15 %, which are installed in a separate wall cabinet.



LTG FAHRTWIND-SIMULATOR TYP VAF 2X1120 E4004 FÜR SC03-FAHRZEUGTESTS GEMÄSS CFR § 1066

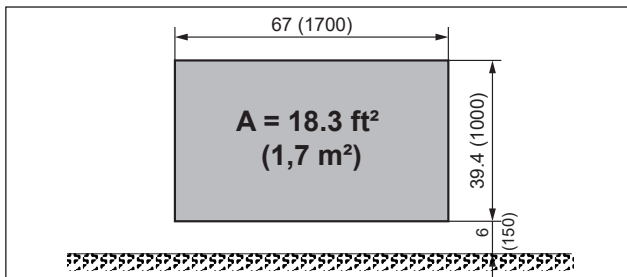
SPECIFICATIONS

- Outlet area 18.3 ft² (1.7 m²)
- Air flow is generated by 2 high-performance axial fans in parallel operation
- Outlet distribution in accordance with CFR § 1066 via an aerodynamically optimised outlet nozzle permits SC03 tests even for large vehicles
- Compact build with high performance density and flow-optimised air channel
- Optional: Monitoring of the device positioning with lifting cart via battery-powered safety switching strips with warning lamps tripping as required
- Optional: Measurement of the vehicle distance from the outlet level during device positioning, digital display
- Optional: Temperature and humidity measurement in the outlet flow

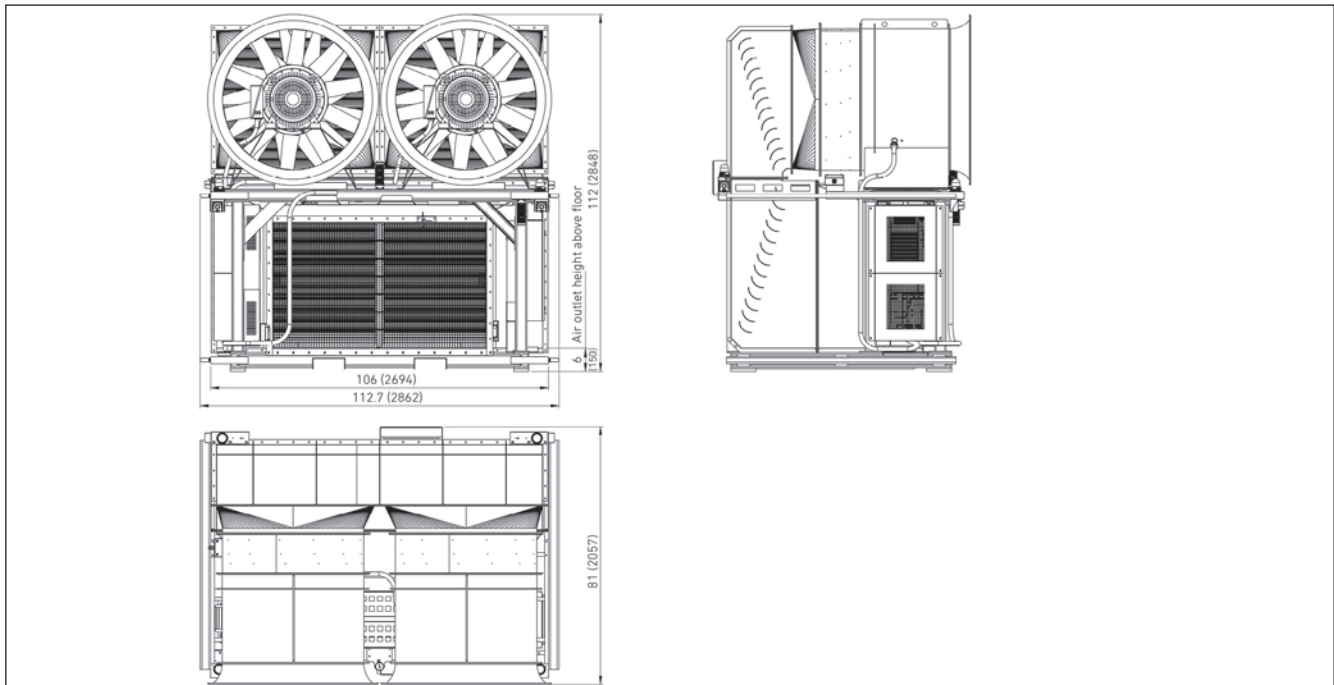
TECHNICAL DATA

Average outlet velocity at nominal speed	60 mph (96 km/h)
Air volume at nominal speed	96 000 cfm (163 200 m ³ /h)
Ambient temperature (without humidity and condensate formation)	+50 to +104 °F +10 to +40 °C
Motor output	169 hp 2 x 63 kW
Outlet area	39.4 x 67 in (1000 x 1700 mm)
Nominal speed of centrifugal fan	1740 rpm
Air outlet height above floor	6 in (150 mm)

OUTLET AREA



DIMENSIONS



LTG FAHRTWIND-SIMULATOR TYPE VAF 2500 E3934 FOR AERO ACOUSTIC VEHICLE ANALYSES AND QUALITY TESTING

Ambient temperature +32 to 104 °F (0 to +40 °C)

APPLICATION

The VAF 2500 E3934 is used for testing aero acoustic conditions in body parts and seals, and for quality testing and verification of prototypes and production vehicles in the automotive industry, vehicle testing centers or certification organisations.

It generates a very uniform airflow that simulates the airstream of a moving vehicle (up to 112 mph/180 km/h). The air velocity is infinitely variable.

Aero acoustic analyses in the vehicle interior are possible thanks to maximum attenuation of the fan noise.



Fahrtwind-Simulator type VAF 3934, air outlet side rotating platform

DESIGN

The LTG Fahrtwind-Simulator consists of an LTG axial fan, silencers inserted upstream and downstream, and an electrically infinitely height-adjustable discharge nozzle. The turntable installed upstream of the discharge nozzle permits an infinite 360° rotation of the vehicle.

Fresh air flushing with a filter system ensures consistent testing conditions. The entire test cell is operated from a Mobile Panel (see also section Accessories, page 24). Integrated convenience functions as a parking assistance allow for rapid vehicle change and efficient testing cycles.



Fahrtwind-Simulator type VAF 3934

LTG FAHRTWIND-SIMULATOR TYPE VAF 2500 E3934 FOR AERO ACOUSTIC VEHICLE ANALYSES AND QUALITY TESTING

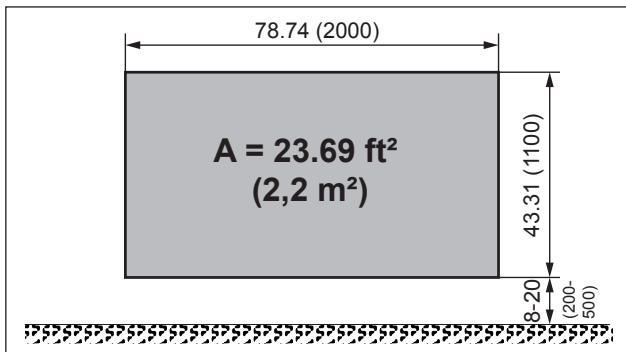
SPECIFICATION

- Outlet Area 2.2 m²
- Electrically infinitely height-adjustable discharge nozzle
- Flexible vehicle arrangement area through rotating platform, variably rotatable 360 °
- Maximum attenuation of fan noise by silencer
- Can work in both recirculation and fresh air mode through automated damper control and filter system
- Maximum machine safety thanks to holistic safety system
- Added value thanks to optimum integration into the testbuilding
- Acoustic and air tightness analyses without driving on roads
- Rapid testing cycles thanks to efficient control and easy operation

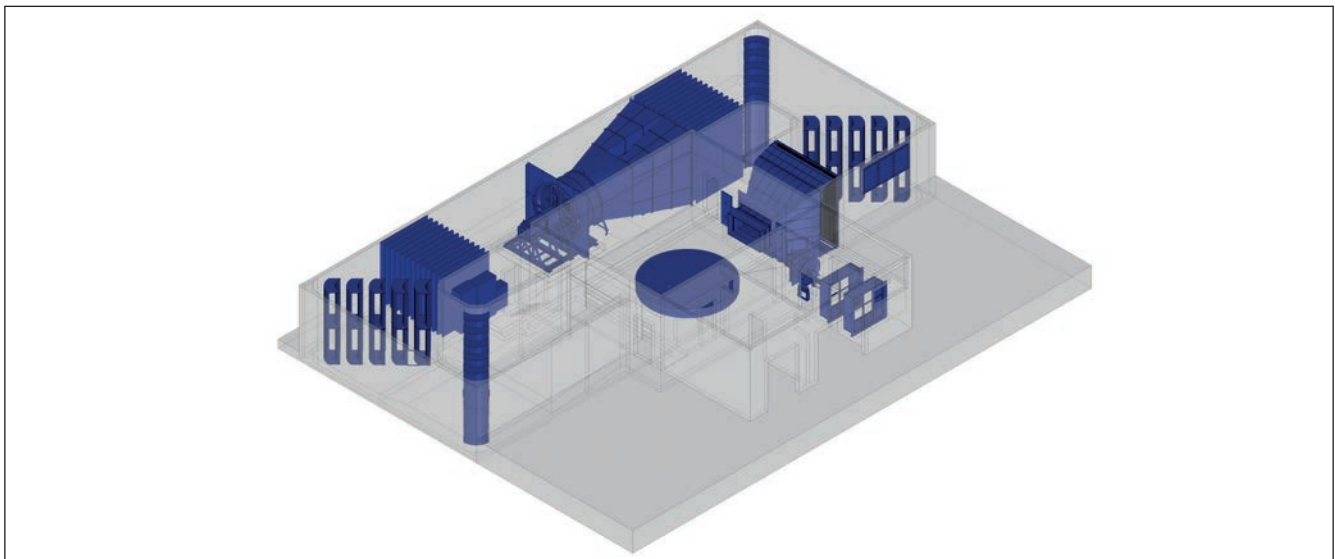
TECHNICAL DATA

Average outlet velocity at nominal speed	112 mph (180 km/h)
Air volume at nominal speed	235 400 cfm (400 000 m ³ /h)
Ambient temperature (without humidity and condensate formation)	+32 to +104 °F (0 to +40 °C)
Motor output	360 hp / 50 Hz (270 kW / 50 Hz)
Outlet area	43.31 x 78.74 in (1100 x 2000 mm)
Air outlet height above floor	8 - 20 in (200 - 500 mm)
Vehicle rotation angle	± 360 °
max. load of rotating platform	7700 lbs (3,5 t)

OUTLET AREA



MECHANICAL DESIGN



LTG FAHRTWIND-SIMULATOR TYPE VAF 2240 E3949/E3904 FOR AERO ACOUSTIC VEHICLE ANALYSES AND QUALITY TESTING

Ambient temperature +32 to +104 °F (0 to +40 °C)

APPLICATION

The VAF 2240 E3904 is used for testing aero acoustic conditions in body parts and seals, and for quality testing and verification of prototypes and production vehicles in the automotive industry, vehicle testing centers or certification organisations.

It generates a very uniform airflow that simulates the airstream of a moving vehicle (up to 100 mph / 160 km/h). The air velocity is infinitely variable.

Aero acoustic analyses in the vehicle interior are possible thanks to maximum attenuation of the fan noise.



Simulation of Fahrtwind, oblique positioning of test vehicle



Simulation of Fahrtwind, test vehicle



Simulation of Fahrtwind, testing area

DESIGN

The LTG Fahrtwind-Simulator consists of an LTG axial fan, silencers inserted upstream and downstream, and an electrically infinitely height-adjustable discharge nozzle. The turntable installed upstream of the discharge nozzle permits an infinite $\pm 15^\circ$ rotation of the vehicle. A temperature-controlled air heater ensures consistent testing conditions. The entire test cell is operated from a Mobile Panel (see also section Accessories, page 24). Integrated convenience functions allow for rapid vehicle change and efficient testing cycles.



Fahrtwind-Simulator VAF 2240 E3904, controls

LTG FAHRTWIND-SIMULATOR TYPE VAF 2240 E3949/E3904 FOR AERO ACOUSTIC VEHICLE ANALYSES AND QUALITY TESTING

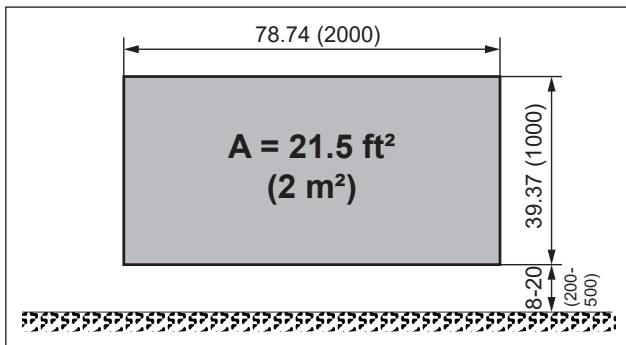
SPECIFICATION

- Outlet area 21.5 ft² (2 m²)
- Electrically infinitely height-adjustable discharge nozzle
- Flexible vehicle arrangement area through rotating platform, variably rotatable between -15 and +15 degrees
- Maximum attenuation of fan noise by silencer
- Can work in both recirculation and fresh air mode through automated damper control
- Consistent testing conditions thanks to temperature-controlled air heater
- Maximum machine safety thanks to holistic safety system
- Added value thanks to optimum integration into the test building
- Acoustic and air tightness analyses without driving on roads
- Rapid testing cycles thanks to efficient control and easy operation

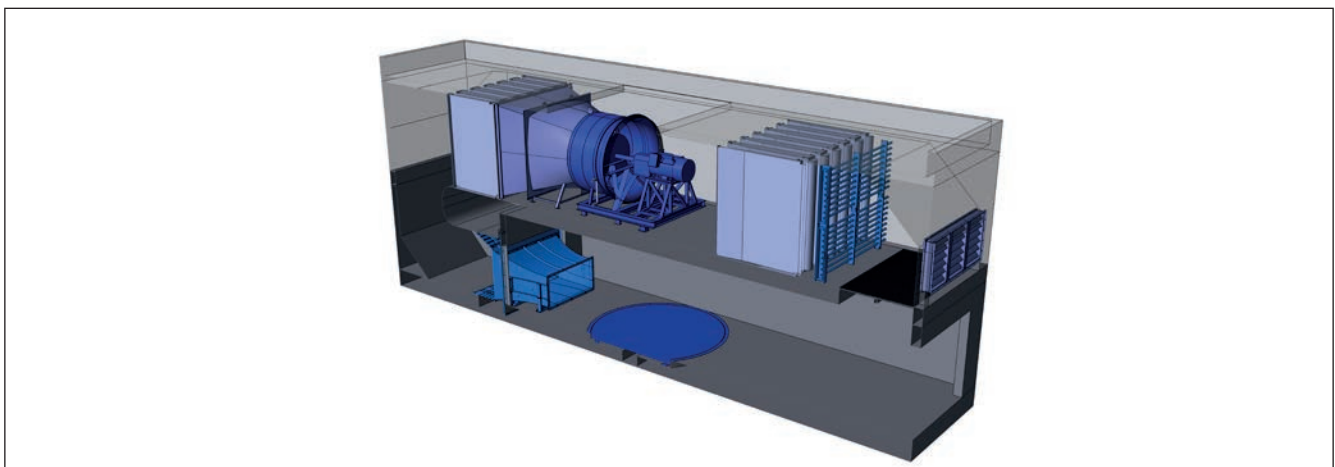
TECHNICAL DATA

Average outlet velocity at nominal speed	90 mph (145 km/h)
Average discharge speed for a short period of time	100 mph (160 km/h)
Air volume at nominal speed	188 300 cfm (320 000 m ³ /h)
Ambient temperature (without humidity and condensate formation)	+32 to +104 °F (0 to +40 °C)
Motor output / Rated power	335 hp / 50 Hz (250 kW / 50 Hz)
Outlet area	39.37 x 78.74 in (1000 x 2000 mm)
Air outlet height above floor	8 - 20 in (200 - 500 mm)
Vehicle rotation angle	± 15 °
max. load of rotating platform	7700 lbs (3,5 t)

OUTLET AREA



MECHANICAL DESIGN



LTG FAHRTWIND-SIMULATOR TYPE VAF 2240 E3794 FOR VEHICLE ROLLER TEST DYNAMOMETERS AND WIND TUNNELS

Ambient temperature +50 to 104 °F (+10 to +40 °C)

APPLICATION

The LTG Fahrtwind-Simulator Type VAF 2240 E3794 is used in the automotive industry by OEMs, Tier 1 suppliers and Tier 2 suppliers.

It generates a very uniform airflow that simulates the airstream of a moving vehicle at up to 145 km/h. Thanks to the optimized geometry, a uniformity of the outlet profile is achieved and a low-turbulence and equally distributed flow is obtained.

Other applications are for example temperature tests in climatic chamber, or output and exhaust measurements on roller test dynamometers.



Fahrtwind-Simulator type VAF 2240 E3794, air intake side

DESIGN

The LTG Fahrtwind-Simulator is supplied in modules.

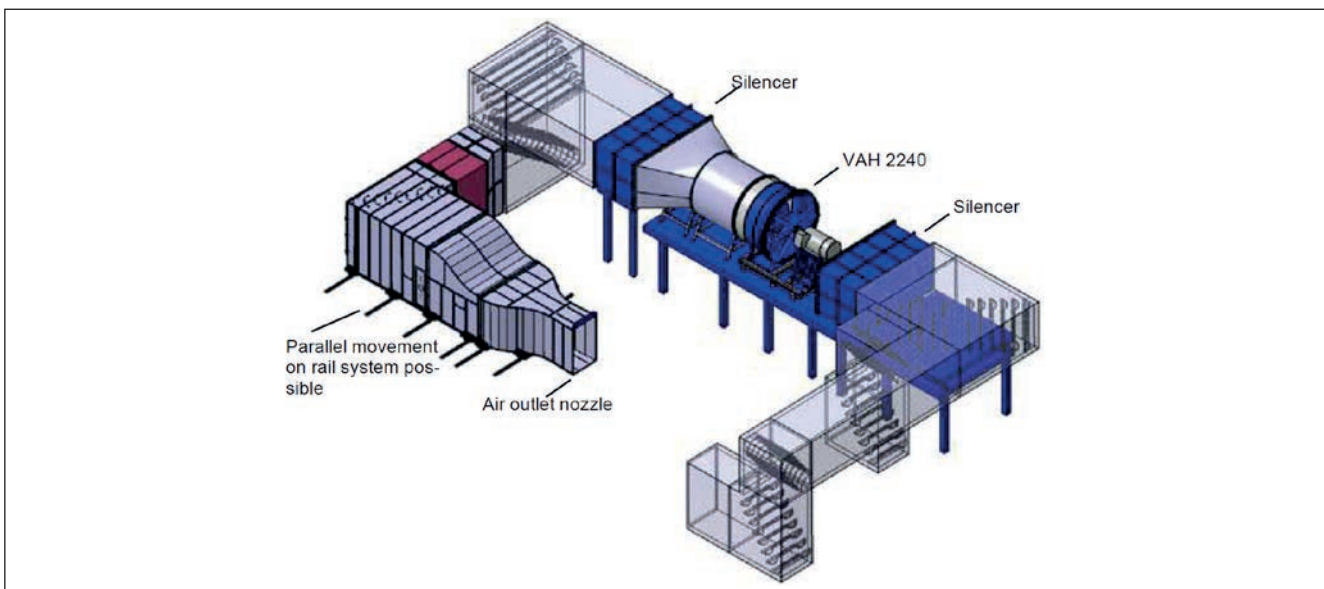
The fan unit is supplied completely assembled on a base frame and consists of an axial fan, motor, coupling, vibration dampers and compensator.

The nozzle is supplied in pre-assembled sub-assemblies.



Fahrtwind-Simulator type VAF 2240 E3794, air outlet side

MECHANICAL DESIGN



LTG FAHRTWIND-SIMULATOR TYPE VAF 2240 E3794 FOR VEHICLE ROLLER TEST DYNAMOMETERS AND WIND TUNNELS

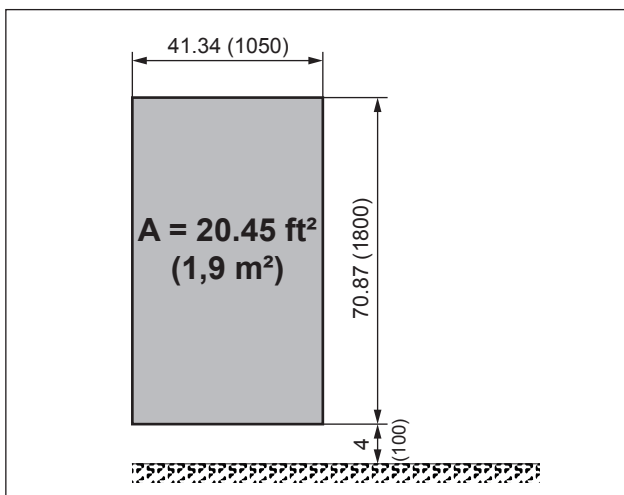
SPECIFICATION

- The VAF 2240 E3794 is part of a closed wind tunnel system
- The fan is located directly inside the air duct, ensuring an optimum and equally distributed flow onto the test vehicles
- Infinite regulation of the air speed is possible with a VFD
- High fan efficiency thanks to optimum oncoming flow
- Parallel movement on rail system possible
- High air speeds possible with high air volume
- Aerodynamically optimized return air flow

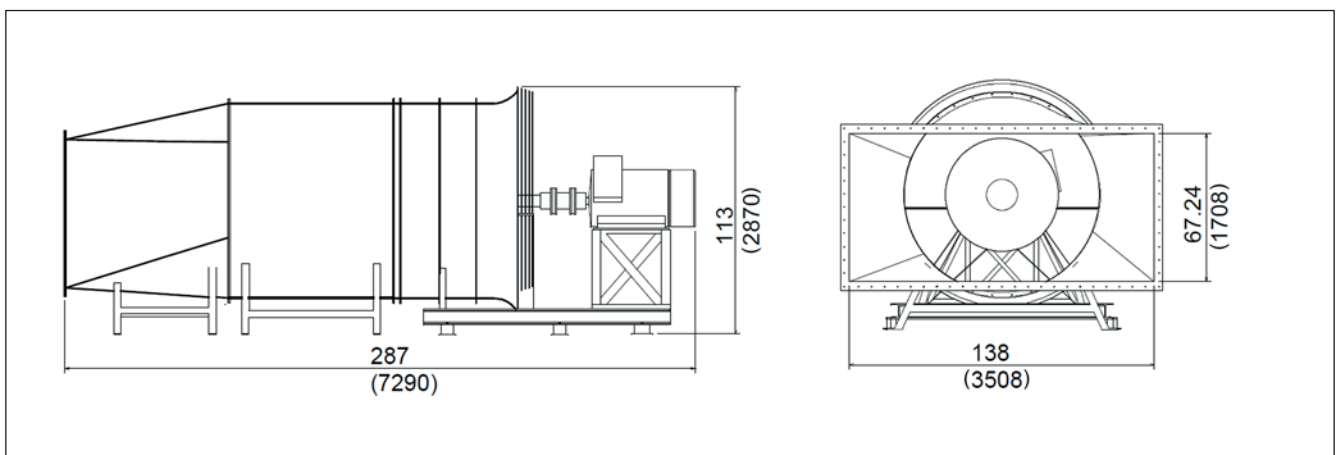
TECHNICAL DATA

Average outlet velocity at nominal speed	90 mph (145 km/h)
Air volume at nominal speed	159 000 cfm (270 000 m ³ /h)
Ambient temperature (without humidity and condensate formation)	+50 to +104 °F (+10 to +40 °C)
Motor output	335 hp (250 kW)
Outlet area	70.9 x 41.3 in (1800 x 1050 mm)
Nominal speed of axial fan	1100 rpm
Air outlet height above floor	4 in (100 mm)

OUTLET AREA



DIMENSIONS



LTG FAHRTWIND-SIMULATOR TYPE VAF 2240 E3847 FOR AERO ACOUSTIC VEHICLE ANALYSES AND TIGHTNESS TESTS

Ambient temperature +14 to 104 °F (-10 to +40 °C)

APPLICATION

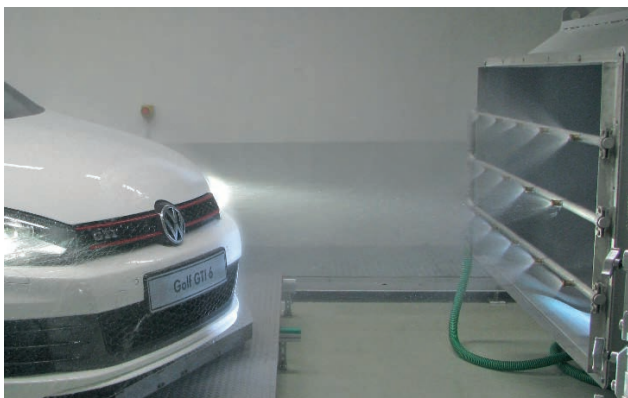
The VAF 2240 E3847 is used for testing aero acoustic conditions in body parts and seals, and for quality testing and verification of prototypes and production vehicles in the automotive industry, vehicle testing centers or certification organizations. The arrangement also allow for a simulation of driving in the rain, so that both dirt and tightness problems can be tested under realistic conditions.

The unit generates a very uniform airflow that simulates the airstream of a moving vehicle (up to 90 mph / 145 km/h). The airflow velocity can be infinitely controlled.

Aero acoustic analyses in the vehicle interior are possible thanks to maximum attenuation of the fan noise.



Simulation of rain using attached spray bars



Simulation of rain, test vehicle at an angle

DESIGN

The LTG Fahrtwind-Simulator consists of an LTG axial fan, and a downstream silencer and an outlet nozzle rotatable by 360°. Optionally, water spraying bars can be fitted in front of the nozzle for simulation of driving in the rain. The turntable installed in front of the outlet nozzle permits infinite rotation of the vehicle by 360° and also both lateral and forward / rearward positioning of the vehicle by +/- 3.28 ft (+/- 1 m). The entire test dynamometer is operated from a Mobile Panel (see also section Accessories, page 24).



Fahrtwind-Simulator type VAF 2240 E3847, outlet side



Fahrtwind-Simulator type VAF 2240 - outlet nozzle rotatable by 360°



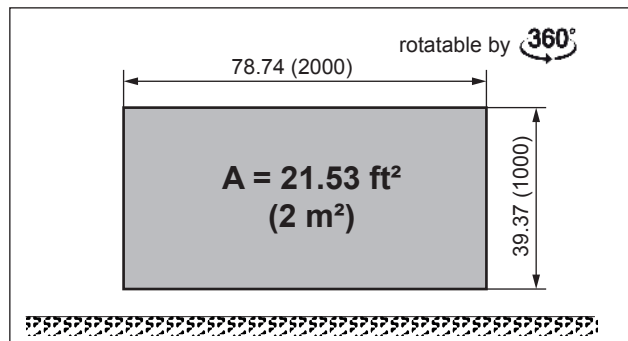
Fahrtwind-Simulator type VAF 2240, outlet side, turntable

LTG FAHRTWIND-SIMULATOR TYPE VAF 2240 E3847 FOR AERO ACOUSTIC VEHICLE ANALYSES AND TIGHTNESS TESTS

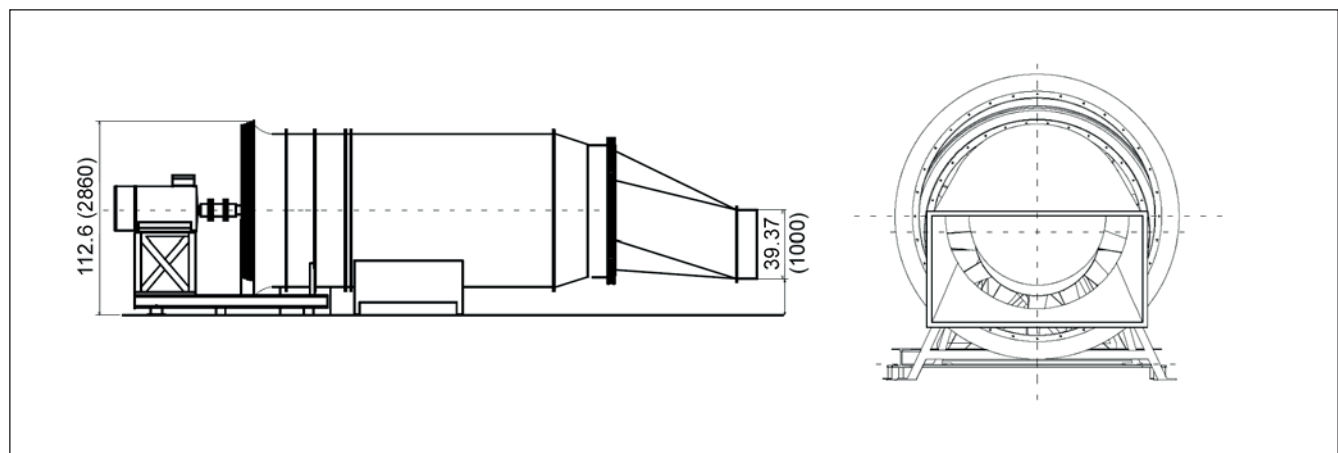
SPECIFICATIONS

- Outlet area 21.53 ft² (2 m²); freely positionable simulation area
- Infinitely electrically rotatable outlet nozzle
- All components in corrosion-resistant design
- Maximum attenuation of fan noise with silencer
- Droplet separator folds away to reduce pressure losses in dry operation
- Can operate in recirculated air and in fresh air mode thanks to automated damper control
- Acoustic and tightness analysis without driving on roads
- The water sprayed during the rain simulation by the optional spraying bars is removed from the air stream directly behind the vehicle using two drop separator doors. In this way, the complete following area of the air duct can be designed without enhanced corrosion prevention measures

OUTLET AREA



DIMENSIONS



TECHNICAL SPECIFICATION OF TURNTABLE

- Flexible vehicle presentation surface which permits both rotary movements and displacement movements in the x and y axes
- Only partial flow onto the vehicle is possible, for example onto the radiator area, the front windows, the roof or the sides, left-hand or right-hand
- Due to the turntable and the outlet nozzle likewise rotatable by 360°, any required airflow situation towards the vehicle can be created in a defined and reproducible manner

TECHNICAL DATA

Average outlet velocity at nominal speed	90 mph (145 km/h)
Air volume at nominal speed	170 500 cfm (290 000 m ³ /h)
Ambient temperature (without humidity and condensate formation)	+14 to +104 °F (-10 to +40 °C)
Motor output	335 hp / 50 Hz (250 kW / 50 Hz)
Outlet area	39.37 x 78.74 in (1000 x 2000 mm)
Nominal speed of axial fan	1200 rpm

TECHNICAL DATA OF TURNTABLE

x-axis movable by	6.56 ft (2 m)
y-axis movable by	3.28 ft (1 m)
vehicle rotatable	360 °
max. loading	7700 lbs (3,5 t)

LTG FAHRTWIND-SIMULATOR TYPE VAF 1400 FOR VEHICLE ROLLER TYPE DYNAMOMETERS

Ambient temperature +10 to +40 °C, mobile

APPLICATION

The Fahrtwind-Simulator type VAF 1400 is mainly used in test dynamometers of the automotive industry for cooling the vehicles. It can however also be used for other test situations, for example temperature tests in the climate chamber or output and exhaust measurements on roller test dynamometers.

DESIGN

The Fahrtwind-Simulator is supplied completely assembled. It comprises of an axial fan, with direct drive and with impeller with adjustable blades, a motor, a terminal box for connection to the power supply, an air duct, an outlet grille and four strong and lockable casters. It can also be supplied with controls



Fahrtwind-Simulator type VAF 1400 - air outlet side



Fahrtwind-Simulator type VAF 1400



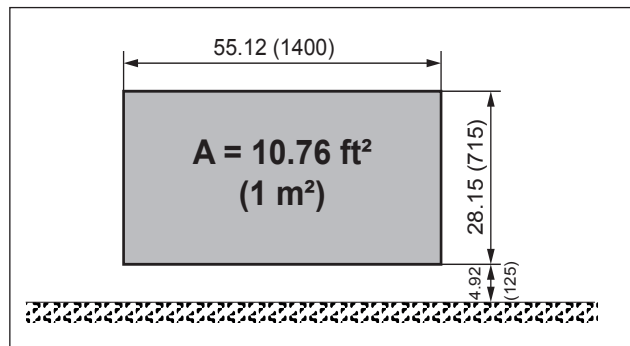
Fahrtwind-Simulator type VAF 1400 - air inlet side

LTG FAHRTWIND-SIMULATOR TYPE VAF 1400 FOR VEHICLE ROLLER TYPE DYNAMOMETERS

SPECIFICATION

- High-performance axial fan with up to 89 % efficiency
- Impeller blades adjustable when stationary for altering the volume flow and hence the air outlet speed
- Aerodynamically efficient and acoustically optimized outlet grille

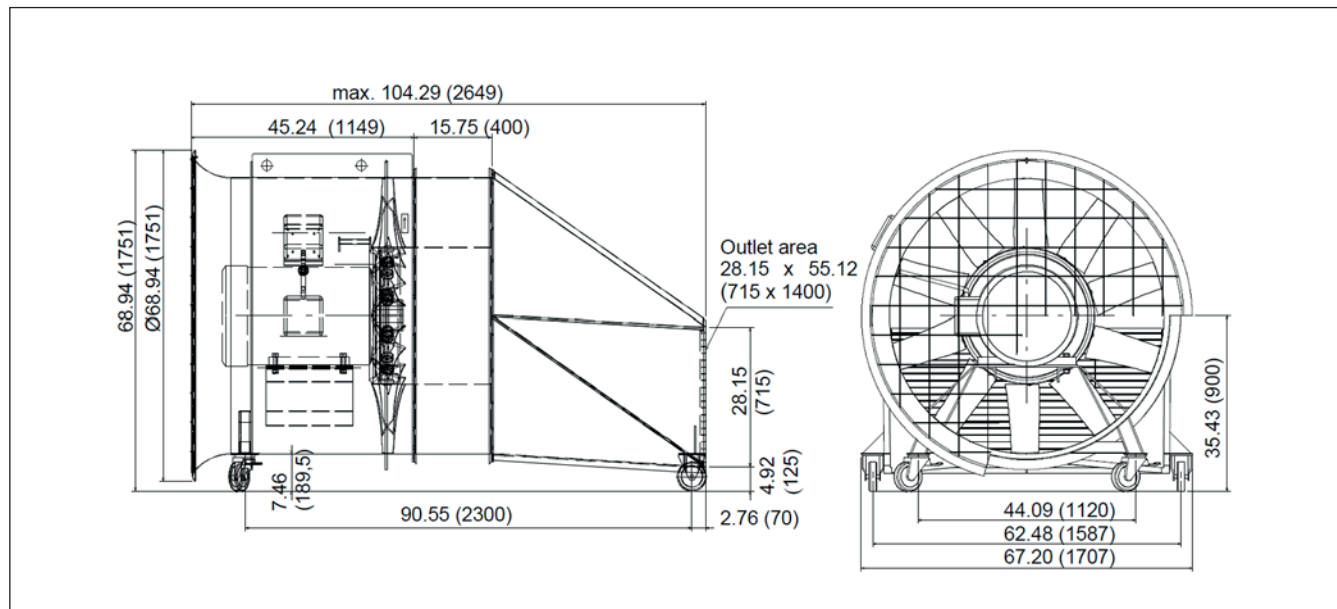
OUTLET AREA



TECHNICAL DATA

Average outlet velocity at nominal speed	60 mph (100 km/h)
Air volume at nominal speed	59 000 cfm (100 000 m ³ /h)
Ambient temperature (without humidity and condensate formation)	+50 to +104 °F (+10 to +40 °C)
Motor output	75 hp (55 kW)
Outlet area	28.15 x 55.12 in (715 x 1400 mm)
Nominal speed of axial fan	1470 rpm
Air outlet height above floor	4.92 in (125 mm)

DIMENSIONS



Further sizes available on request.

LTG FAHRTWIND-SIMULATORS SERIES VAF

ACCESSORIES

MOBILE PANEL



APPLICATION

The Mobile Panel provides maximum mobility for the operator of the LTG Fahrtwind-Simulator - ideal for wireless control and monitoring.

Full safety functions through WLAN are warranted. With its low weight and handy, compact structure, the Mobile Panel is easy to handle.

SPECIFICATION

Compact and ergonomic

- Fast and safe handling
- Intuitive one-handed control for left- and right handed persons
- Low weight, compact and ergonomic design

Rugged design for industrial use

- Extremely shock resistant. For example, they can survive a fall from a height of more than one meter without damage.
- The STOP button in particular is protected with a „protective-collar“. This minimizes the possibility of unintentional triggering of the safety function or the risk of damage.
- The powerful batteries can be replaced without interrupting operation. This ensures trouble-free operation.
- Completely dust-proof and splash-proof.

Reliable and secure operation

- Intuitive operation via touch screen or membrane keys.
- Even when the operator is wearing gloves, perceptible and reliable feed-back is provided.
- Membrane keys and touch buttons can directly be linked to the peripheral equipment.

Certified safety

- The suitability of the device for particularly high safety requirements has been tested and certified by TÜV (SIL 3).
- The necessary radio approvals already exist for worldwide use.
- A fail-safe SIMATIC F CPU must be used to be able to utilize the safety functions.

TECHNICAL DATA

- Luminous 7.5 TFT touch screen display (VGA resolution 640x480), 64k colors
- 18 membrane keys with LED's
- 2 enabling buttons (left/right)
- EmergencyOFF, handwheel, key switch and illuminated push buttons
- 6 MB main storage
- Use of archives (SD / MMC Card)
- USB port
- Connection point detection - can be configured such that the user interface changes according to the connection point



© Siemens AG 2012, all rights reserved

ACCESSORIES

HIGH PERFORMANCE ANEMOMETER VQ_VA/40/D 85

APPLICATION

Speed-dependent wind simulation requires extremely precise measurement of the air speed.

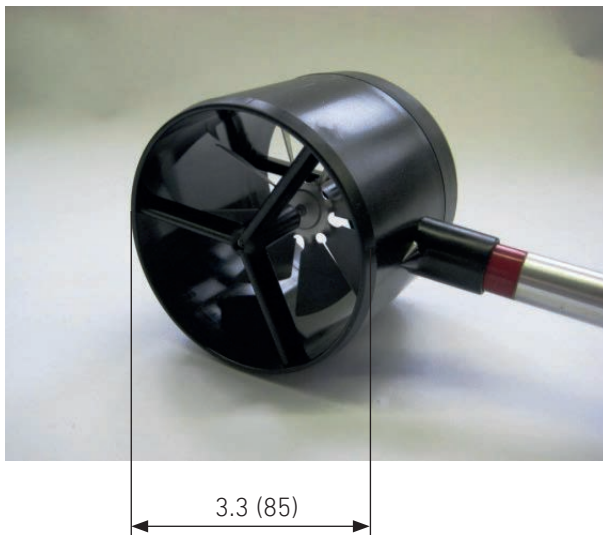
Measurements of this type can be performed using the certified and calibrated impeller wheel anemometer. Thanks to the large impeller wheel, the anemometer available at LTG has an optimum integration surface for improved evaluation of the measurement data.

TECHNICAL DATA

Possible measuring range	0.7 - 89.5 mph
Temperature range	+14 to +176 °F
Head size	Ø 3.3 x 3.1 in
Total length	8.9 in
Output signal	0 - 2 V
Measurement accuracy	± 1.5 % of mean speed.

INCL. DIGITAL DISPLAY INSTRUMENT MINIAIR20

- Automatic sensor and range detection
- Flow and temperature measurements
- Humidity and speed
- Mean, minimum, maximum values at the touch of a button
- Freely selectable measurement time (2 s - 2 h)
- Measurement time memory for repetition measurements
- Recorder output 0 - 1 V and output for Mini2Logger
- Battery and mains operation





**AIR TECH
SYSTEMS**

COMFORT AIR TECHNOLOGY

Air-Water Systems
Air Diffusers
Air Distribution

PROCESS AIR TECHNOLOGY

Fans
Filtration Technology
Humidification Technology

ENGINEERING SERVICES

Laboratory Test & Experiment
Field Measurement & Optimisation
Simulation / Analysis
R&D & Start-up

LTG Aktiengesellschaft

Grenzstraße 7
70435 Stuttgart
Germany

Tel.: +49 711 8201-0
Fax: +49 711 8201-720

info@LTG.de
www.LTG.net

LTG Incorporated

105 Corporate Drive, Suite E
Spartanburg, SC 29303
USA

Tel.: +1 864 599-6340
Fax: +1 864 599-6344

info@LTG-INC.net
www.LTG-INC.net