In-Housing Source 1223D-12S
Broadband 140 – 220 GHz

Signal Source in WR-5.1 Based on ACST's High-Power Multiplier Technology.

1223x-S series of signal sources are designed to provide RF-signal at MM-Waves. The source consists of a Voltage-Controlled Oscillator (VCO), followed by an Amplifier/Multiplier Chain (AMC). The AMC applies ERZIA High-Power Broadband Amplifier Technology and ACST High-Power Multiplier Technology resulting in best available performance with respect to output power, bandwidth, and spectral purity.

The output signal frequency is defined by a tune voltage applied at the V-tune port. Based on a modular design, each Source from this series is integrated in an esthetic metallic housing featuring standard input and output interfaces. They are fixed tuned and do not require any adjustment for proper operation. All required voltage biases and current sources are provided by an integrated Power Supply Unit (PSU). The module only needs electrical powering of 18V DC, which is provided by a universal AC/DC adapter, included in the delivery package.

Type **1223D-12S** module requires an input signal within the voltage range of 4 to 14.5 V, generating an output signal within the frequency range of 140 to 220 GHz. In addition to standard options for 1223x series, a variable 1-25dB attenuator is offered for user-controlled output power.

Various options can optionally be offered and integrated on customer request:

- Horn antenna (for coupling the output signal to free space),
- Waveguide sections compatible with the output RF-port
- User controlled output power by integration of a mechanically driven variable attenuator

Please consult sales@acst.de for available options for this product type

Product Features

> High-Power & Efficiency

> Full band

> Flat response

Application Areas

> Laboratory instrumentation

> MM-wave FMCW-Radar

> Active imaging

> LO Source for MM/SubMM wave heterodyne receivers

Technical Specification

	Minimum	Typ	Maximum
Input Port DC (Coaxial)		SMA	
Input DC Voltage (V)	4		14.5
Output Port (UG 387/U-M)		WR-5.1	
Output Frequency (GHz)	140		220
Output Power (dBm)	+6	+11	+13
Freq. Drift Rate (MHz/°C)	1	7	12
TTL Port Voltage (V)	0 (ON)		5 (OFF)
TTL Port Speed (kHz)		1	10
Total Power Consumption (W)			30

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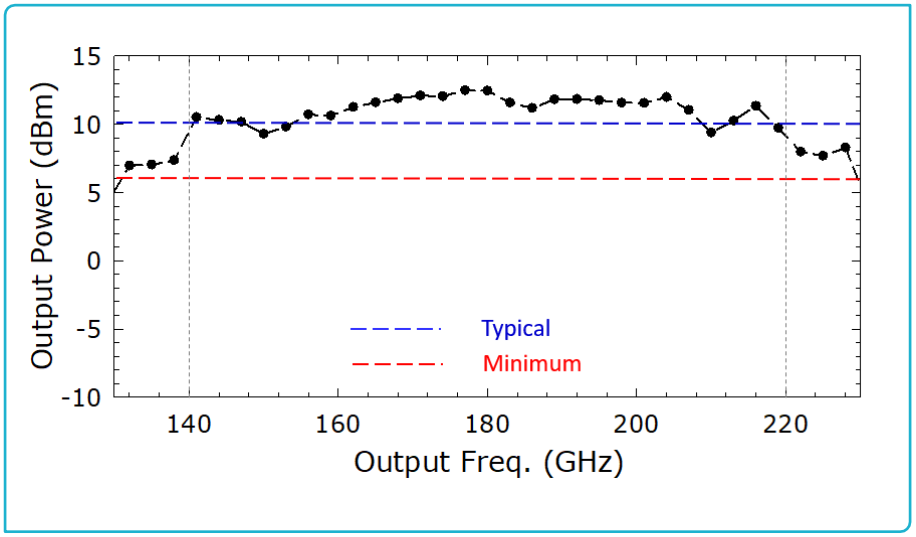
Typical Performance



Notes

> **All plotted data represent typical values. The actual data may vary from unit to unit.**

> **All tests are carried out at a room temperature of 24 °C.**

Caution

> **Absolute maximum ratings should not be used under normal operating conditions. Exceeding maximum ratings may lead to permanent failure.**

> **Any foreign body inserted into the waveguide will cause a loss of performance and may damage the device.**

Absolute Maximum Ratings

	Maximum
Operational Temperature and Humidity	5 °C to 45 °C // 0% to 80%
Storage Temperature and Humidity	5 °C to 65 °C // 0% to 80%

Order information

- Please indicate product name and type.
- Please indicate desired optional features

ESD

ACST GmbH reserves the right to make changes to the product or information contained herein without notice. Visit www.acst.de for additional data sheets and product information.

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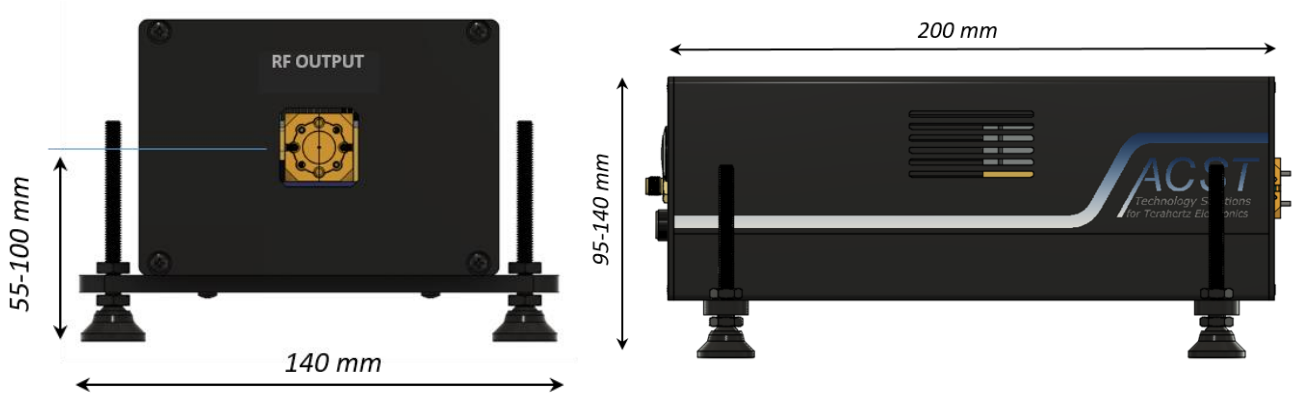
Outline Dimensions



Mechanical Description

	Maximum
Size (W x H x L without connectors, mm)	140 x 95 (140) x 200
Overall weight (kg)	2
Output Waveguide Orientation	H-Plane

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