

- High output power
- CW and Pulse operation modes
- Current stabilizer included for reliable operation
- High power and frequency stability
- Digital/Electrical control of output power level
- Low amplitude noises due to saturation regime
- Long life time

## Applications

- Laboratory measurement and test equipment
- Mm-wave source of high power
- EPR spectrometer bridge
- DNP polarizer source
- Plasma diagnostics
- FMCW radar module
- Communication systems



## Description

ELVA-1 Injection-locked Amplifiers **IILA-XX** series are intended for high-power amplification of CW and pulse mm-wave signals. They are offered in the frequency range from 26 to 150 GHz in five waveguide bands. They can operate from power level as low as 2-3 mW which can be obtained directly from Up-Converter or frequency multiplier. When IILA-XX amplifier is injection locked FM noise of the output is the same as the input injection signal. In the absence of an in-band input signal of sufficient power to attain injection lock, there is a free running output signal.

The amplifiers are provided with integral circulators and DC voltage regulator. An operational heater is available for better temperature stability. To achieve higher gain, broader locking bandwidth and higher output, multistage and multi-diode configurations are also available.

Reliable work of **IILA-XX** oscillators allows using them in scientific experiments which last for long time, a few weeks or even months.

Custom designed **IILA-XX** models can be produced by special order.

## Specifications

MODEL	IILA-22	IILA-15	IILA-10	IILA-06
Central frequency from range (specify), GHz	40-50	50-75	75-110	110-150
Max CW power (typ), mW	200	200	200	200
Max pulse power, W	15	15	10	2
Injection locked bandwidth at -1dB level, MHz	300	400	500	500
Input injection power level range, dBm	+5..+10	+5..+10	+5..+10	+5..+10
Power output flatness (max), dB	+/-1	+/-1	+/-1	+/-1
DC power (IMPATT bias), V/A	+45/0.4	+32/0.4	+27/0.4	+24/0.4
Flange/ Waveguide	UG-383/U /WR-22	UG-385/U /WR-15	UG-387/U-M /WR-10	UG-387/U-M /WR-06

Typical measured data of IILA-94/1.0/200/15 amplifier:

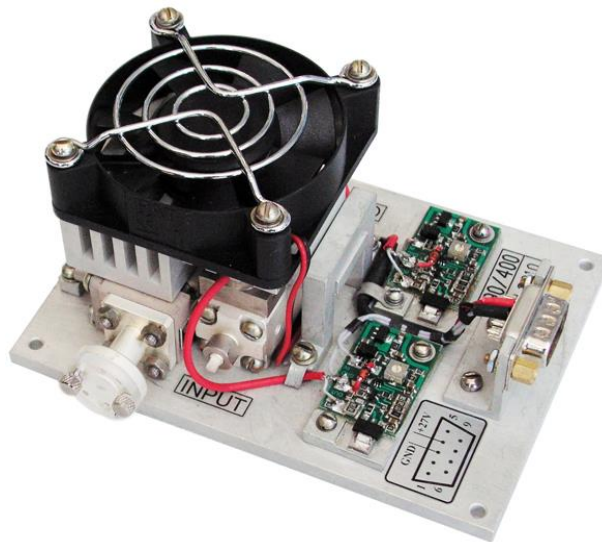
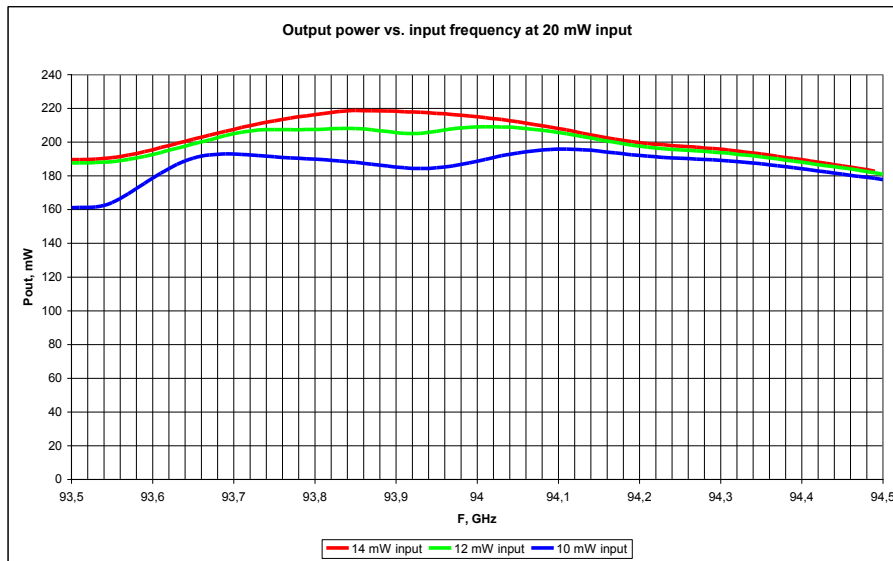


Photo of 400 mW power amplifier produced for special request  
Input power 160 mW, output power 400 mW, F=90 GHz

## How to Order

Specify Model Number IILA-XX/CF/BW/P/I, where

- **XX** – number of waveguide standard (Ex. 10 for WR-10 and 06 for WR-06)
- **CF** – central operating frequency in GHz
- **BW** – operating bandwidth, GHz
- **P** – output power (nom), mW

## Example

**IILA-10/94/0.5/200/20** ( W-band IMPATT injection locked amplifier, WR-10 waveguide, Central frequency 94GHz, Bandwidth 0.5 GHz, Output power 200 mW (typ), Input signal 20 mW