

## STANDARD MODELS

Model	Frequency Range	Output Power P <sub>N</sub> min / typ W	Gain min / typ dB	Harmonics 2nd / 3rd dBc	Line Power VA	Dimensions (H, D) 19"-System	Weight kg
TWAL 1113-400	10.5 ... 13 GHz	400 / 450	46 / 56 ±10	10 / 20	4000	15 HU, 700 mm	90

For individual data sheets, please click on the above model name

1 HU = 44.45 mm

## STANDARD SPECIFICATIONS

Input Power:	0 dBm (1 mW) max.
Overdrive Protection:	up to +10 dBm for no damage
Input Impedance:	50 Ohm nominal
Output Impedance:	50 Ohm nominal
Input VSWR:	<2:1 typ.
Load VSWR:	infinite for no damage (100% mismatch tolerant)
	P <sub>N</sub> -0.5 dB min. at VSWR 2:1
Spurious (at P <sub>N</sub> ):	-50 dBc typ. (excluding harmonics)
Noise Figure	20 dB max.
Class of Operation:	A-linear

## GENERAL

RF Input:	1 ... 18 GHz	N-f; standard on rear panel
	18 ... 40 GHz	2.92 mm-f; standard on rear panel
RF Output (up to 1 kW):	1 ... 18 GHz	N-f
	6 ... 18 GHz	WRD 650
	8 ... 18 GHz	WRD 750
	18 ... 26,5 GHz	WR 42
	26,5 ... 40 GHz	WR 28
RF Output (1 kW or more):	1 ... 8 GHz	7-16-f
	8 ... 18 GHz	WRD 750
Mains Supply:	200 ... 240 V AC	47 ... 63 Hz
Elapsed Time Meter:	via status display	
Ambient Temperature:	0 ... 45 °C	
Storage Temperature:	-20 ... +85 °C	
Relative Humidity:	up to 95% (non-condensing)	
Operating Altitude:	up to 2000 m above sea level	
Vibration and Shock:	normal laboratory environment	
Cooling:	forced air with integral blower air intake and exhaust at rear	

## OPTIONS

A) RF Monitor Outputs *)	N) Harmonic Filter *)
B) External Dual Directional Coupler	R) RS-232C Remote Control
C) IEEE-488.2 GPIB Remote Control	S) Internal RF Switching Unit *)
D) Front Panel RF Connectors	U) USB Remote Control
E) RF Power Indication (digital) *)	W) Liquid Cooling

# TWAL 10.5 ... 13 GHz TWT Amplifiers

F) Gain Adjustment \*)  
G) Output Isolator \*)  
L) Remote Control

X) External Control of other Amplifiers

\*) These options may reduce output power and/or gain