



Plasma &

Reactive Gas Solutions

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# AL 20000 Series

## INDUSTRIAL MICROWAVE GENERATORS 2450 MHz

MKS Alter® AL 20000 Series Microwave Generators are built on experience and designed with rugged and reliable switch mode power supplies for demanding industrial applications. The AL 20000 Series offers compact generators up to 3 kW in a 19 inch standard rack with a remote head and integrated isolator. For 6 and 10 kW microwave generators an isolator is included. All MKS, Alter microwave generators are equipped with reflected power detection.

### Features & Benefits

- Proven switch mode technology
- Large choice of input line voltage
- Configurable remote control
- Reliable & cost-effective
- Extremely compact and light weight

Type	MW Power	Power Supply	Isolauncher	Mag Head	Isolator	Waveguide
AL 20020	2 kW	SM 845	TI020	—	integrated	WR340
AL 20030	3 kW	SM 1250	TI030	—	integrated	WR340
AL 20060	6 kW	SM 1280	—	TM060	external	WR340
AL 20100	10 kW	SM 1690	—	TM100	external	WR340
AL 20150	15 kW	MPS 24	—	TM150	option	WR340



## AL 20020

<b>Power Output</b>	200-2000 W
<b>Frequency</b>	2440-2470 MHz
<b>Power Regulation</b>	10-100%
<b>Line Load Regulation</b>	1%
<b>Ripple</b>	Max $\pm 3\%$ of output power
<b>Ambient Temperature</b>	Up to 40°C maximum
<b>Microwave Connections</b>	WR340 waveguide with PDR26 flange
<b>Remote Control Options</b>	PLC, RS232, ANYBUS
<b>AC Power Input</b>	230 VAC $\pm 10\%$ , 50/60 Hz
<b>Compliance</b>	CE
<b>Power Supply</b>	SM845
Dimensions	88mm (H) x 483mm (W) x 420mm (D)
<b>Cooling</b>	Forced air, approx 100 m <sup>3</sup> /h
<b>Power Head</b>	TI020
Dimensions	280mm (H) x 162mm (W) x 229mm (D)
<b>Cooling</b>	1 L/min, max 5 bar (inlet temp: 20-30°C)

## AL 20030

<b>Power Output</b>	300-3000W
<b>Frequency</b>	2440-2470 MHz
<b>Power Regulation</b>	10-100%
<b>Line Load Regulation</b>	1%
<b>Ripple</b>	Max $\pm 3\%$ of output power
<b>Ambient Temperature</b>	Up to 40°C maximum
<b>Microwave Connections</b>	WR340 waveguide with PDR26 flange
<b>Remote Control Options</b>	PLC, RS232, ANYBUS
<b>AC Power Input</b>	3 x 208 V, 50/60 Hz; 3 x 400 V, 50/60 Hz
<b>Compliance</b>	CE
<b>Power Supply</b>	SM1250
Dimensions	130mm (H) x 447mm (W) x 420mm (D)
<b>Cooling</b>	Forced air, approx 120 m <sup>3</sup> /h
<b>Power Head</b>	TI030
Dimensions	280mm (H) x 162mm (W) x 229mm (D)
<b>Cooling</b>	2 L/min, max 5 bar (inlet temp: 20-30°C)



**Power Supply —**  
SM 1250 shown



**Power Head —**  
TI030 shown

# Specifications

## AL 20060

<b>Power Output</b>	600-6000W
<b>Frequency</b>	2440 - 2470 MHz
<b>Power Regulation</b>	10-100%
<b>Line Load Regulation</b>	3%
<b>Ripple</b>	Max $\pm$ 5% of output power
<b>Ambient Temperature</b>	Up to 40°C maximum
<b>Microwave Connections</b>	WR340 waveguide with PDR26 flange
<b>Remote Control Options</b>	RS232, ANYBUS (optional)
<b>AC Power Input</b>	3 x 208 V, 50/60 Hz; 3 x 400 V, 50/60 Hz
<b>Compliance</b>	CE
<b>Power Supply</b>	SM1280
Dimensions	310mm (H) x 444mm (W) x 482mm (D)
<b>Cooling</b>	Forced air, approx 200 m <sup>3</sup> /h
<b>Power Head</b>	TM060
Dimensions	375mm (H) x 235mm (W) x 225mm (D)
<b>Cooling</b>	4 L/min, max 5 bar (inlet temp: 20-30°C), Water cooled

## AL 20100

<b>Power Output</b>	1-10 kW
<b>Frequency</b>	2440-2470 MHz
<b>Power Regulation</b>	10-100%
<b>Line Load Regulation</b>	10%
<b>Ripple</b>	Max $\pm$ 5% of output power
<b>Ambient Temperature</b>	Up to 40°C maximum
<b>Microwave Connections</b>	WR340 waveguide with PDR26 flange
<b>Remote Control Options</b>	RS232, ANYBUS (optional)
<b>AC Power Input</b>	3 x 400 V, 50/60 Hz; 3 x 480 V, 50/60 Hz
<b>Compliance</b>	CE
<b>Power Supply</b>	SM1690
Dimensions	310mm (H) x 444mm (W) x 482mm (D)
<b>Cooling</b>	Forced air, approx 200 m <sup>3</sup> /h
<b>Power Head</b>	TM100
Dimensions	375mm (H) x 235mm (W) x 225mm (D)
<b>Cooling</b>	7 L/min, max 5 bar (inlet temp: 20-30°C), Water cooled



**Power Supply** —  
SM 1280 shown



**Power Head** —  
T100 shown

## Specifications and Ordering Information

### AL 20150

<b>Power Output</b>	1- 15 kW
<b>Frequency</b>	2440 - 2470 MHz
<b>Power Regulation</b>	10%
<b>Line Load Regulation</b>	—
<b>Ripple</b>	Max ± 5% of output power
<b>Ambient Temperature</b>	Up to 40°C maximum
<b>Microwave Connections</b>	WR430 waveguide with PDR22 flange
<b>Remote Control Options</b>	RS232, ANYBUS (optional)
<b>AC Power Input</b>	3 x 400 V, 50/60 Hz; 3 x 480 V, 50/60 Hz
<b>Compliance</b>	CE
<b>Power Supply</b>	MPS 24 Option: integrated in cabinet
Dimensions	1500mm (H) x 600mm (W) x 800mm (D)
<b>Cooling</b>	Forced air, approx 800 m <sup>3</sup> /h; water cooled, 2L/min
<b>Power Head</b>	TM150
Dimensions	280mm (H) x 162mm (W) x 229mm (D)
<b>Cooling</b>	2L/min, max 5 bar (inlet temp: 20-30°C)

## Ordering Information

Please contact your local MKS sales office for price and availability information.



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