

TruPlasma RF 3000 Series

High power with best in class efficiency

Features

- Arc Management with innovative Arc Recipe and Arc Counter
- Smart Auto Frequency Tuning
- Best in class wall-plug efficiency of > 80 %
- Highest accuracy and stability down to 1 W
- Patented CombineLine Technology with cable length independency



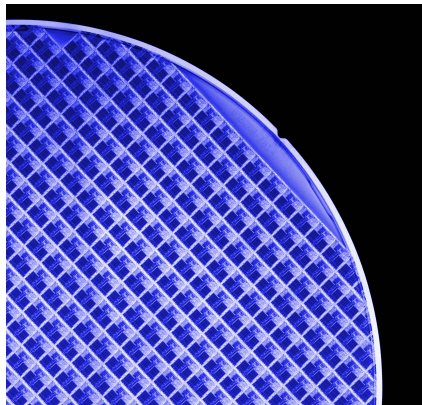
Applications

Semiconductor Applications

- Chemical Vapor Deposition (CVD)
- Atomic Layer Deposition
- Atomic Layer Etch
- Reactive Ion Etching

High Power Display Applications

- Dry Etch Process
- Plasma Enhanced Chemical Vapour Deposition (PECVD)
- CCP and ICP chambers



Benefits



Flexible adaption to the process



Extremely efficient and cost effective especially for higher power



Stable process power for best productivity and reproducibility



Substantial contribution to process homogeneity and highest uptime

Technical data

RF output		TruPlasma RF 3000-6/13
Output power		6 kW
Rated power		6 kW
Nominal load impedance		50 Ω
Output frequency		13.56 MHz
Networking connection data		
Line voltage		200 – 480 V
Line frequency		50 – 60 Hz
Line input power		7.9 kVA
Power factor		0.95
Communication interfaces		
Sync interfaces		yes
Analog / digital		yes
RS 232 / RS 485		yes
Profibus		yes (optional)
EtherCAT		yes (optional)
DeviceNet		yes (optional)
Housing		
Weight		38 kg
IP protection class		30
Cooling requirements		
Maximum water pressure		7 bar
Minimum pressure difference		1.1 bar
Minimum flow rate		8 l/min
Coolant temperature		5 °C – 35 °C
General		
Overall efficiency		80 %
Certificates / standards		UL, CE, RoHS, NRTL
Ambient conditions		
Outside temperature		5 °C – 40 °C
Humidity		5 % – 85 %
Barometric pressure		79.5 kPa – 106 kPa

Technical data

RF output	TruPlasma RF 3010	TruPlasma RF 3012
Output power	10 kW	12 kW
Rated power	10 kW	12 kW
Nominal load impedance	50 Ω	50 Ω
Output frequency	13.56 MHz	13.56 MHz
Networking connection data		
Line voltage	200 – 220 V, 400 – 480 V	200 – 220 V, 400 – 480 V
Line frequency	50 – 60 Hz	50 – 60 Hz
Line input power	3.9 kVA (@ 400V)	16.8 kVA (@ 200V), 16.6 kVA (@ 400V)
Power factor	> 0.9	> 0.9
Communication interfaces		
Sync interfaces	yes	yes
Analog / digital	yes	yes
RS 232 / RS 485	yes	yes
Profibus	yes	yes
EtherCAT	yes (optional)	yes (optional)
DeviceNet	yes (optional)	yes (optional)
Housing		
Weight	57 kg	57 kg
IP protection class	20	20
Cooling requirements		
Maximum water pressure	7 bar	7 bar
Minimum pressure difference	2 bar	2 bar
Minimum flow rate	10 l/min	10 l/min
Coolant temperature	5 °C – 35 °C	5 °C – 35 °C
General		
Overall efficiency	> 78 %	> 77 %
Certificates / standards	Semi S2, SEMI F47, UL, CE, RoHs	Semi S2, SEMI F47, UL, CE, RoHs
Ambient conditions		
Outside temperature	5 °C – 40 °C	5 °C – 40 °C
Humidity	5 % – 85 %	5 % – 85 %
Barometric pressure	79.5 kPa – 106 kPa	79.5 kPa – 106 kPa

Technical data

RF output	TruPlasma RF 3020	TruPlasma RF 3024
Output power	20 kW	24 kW
Rated power	20 kW	24 kW
Nominal load impedance	50 Ω	50 Ω
Output frequency	13.56 MHz	13.56 MHz
Networking connection data		
Line voltage	400 – 480 V	400 – 480 V
Line frequency	50 – 60 Hz	50 – 60 Hz
Line input power	25.8 kVA	33.3 kVA
Power factor	> 0.9	> 0.9
Communication interfaces		
Sync interfaces	yes	yes
Analog / digital	yes	yes
RS 232 / RS 485	yes	yes
Profibus	yes	yes
EtherCAT	yes (optional)	yes (optional)
DeviceNet	yes (optional)	yes (optional)
Housing		
Weight	117 kg	117 kg
IP protection class	20	20
Cooling requirements		
Maximum water pressure	7 bar	7 bar
Minimum pressure difference	2 bar	2 bar
Minimum flow rate	20 l/min	20 l/min
Coolant temperature	5 °C – 35 °C	5 °C – 35 °C
General		
Overall efficiency	> 75 %	> 75 %
Certificates / standards	Semi S2, SEMI F47, UL, CE, RoHs	Semi S2, SEMI F47, UL, CE, RoHs
Ambient conditions		
Outside temperature	5 °C – 40 °C	5 °C – 40 °C
Humidity	5 % – 85 %	5 % – 85 %
Barometric pressure	79.5 kPa – 106 kPa	79.5 kPa – 106 kPa

Technical data

RF output		TruPlasma RF 3000-27/13
Output power		27 kW
Rated power		27 kW
Nominal load impedance		50 Ω
Output frequency		13.56 MHz
Networking connection data		
Line voltage		400 – 480 V
Line frequency		50 – 60 Hz
Line input power		38.1 kVA
Power factor		> 0.9
Communication interfaces		
Sync interfaces		yes
Analog / digital		yes
RS 232 / RS 485		yes
Profibus		yes
EtherCAT		yes (optional)
DeviceNet		yes (optional)
Housing		
Weight		38 kg
IP protection class		30
Cooling requirements		
Maximum water pressure		7 bar
Minimum pressure difference		1.1 bar
Minimum flow rate		8 l/min
Coolant temperature		5 °C – 35 °C
General		
Overall efficiency		> 75 %
Certificates / standards		CE, RoHs, SEMI F47, Samsung Vaccine
Ambient conditions		
Outside temperature		5 °C – 40 °C
Humidity		5 % – 85 %
Barometric pressure		79.5 kPa – 106 kPa