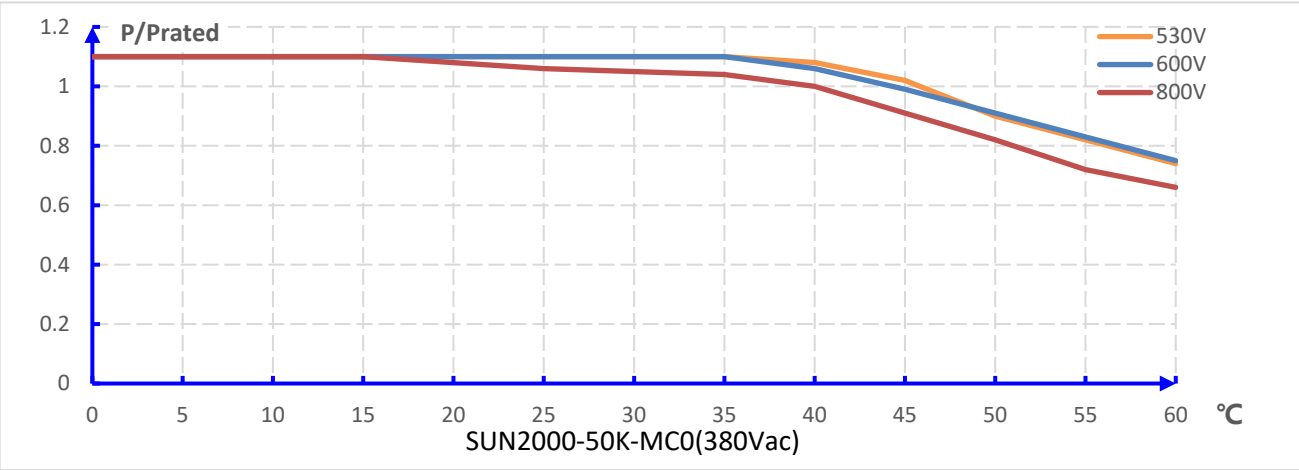
# SUN2000-50K-MC0 Output Characteristics Curve (Version 1.0)

**Huawei Technologies Co., Ltd.**

| Version | Created by | Date | Remarks |
|---|---|---|---|
| 01 | Huawei | 2025-12-10 | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

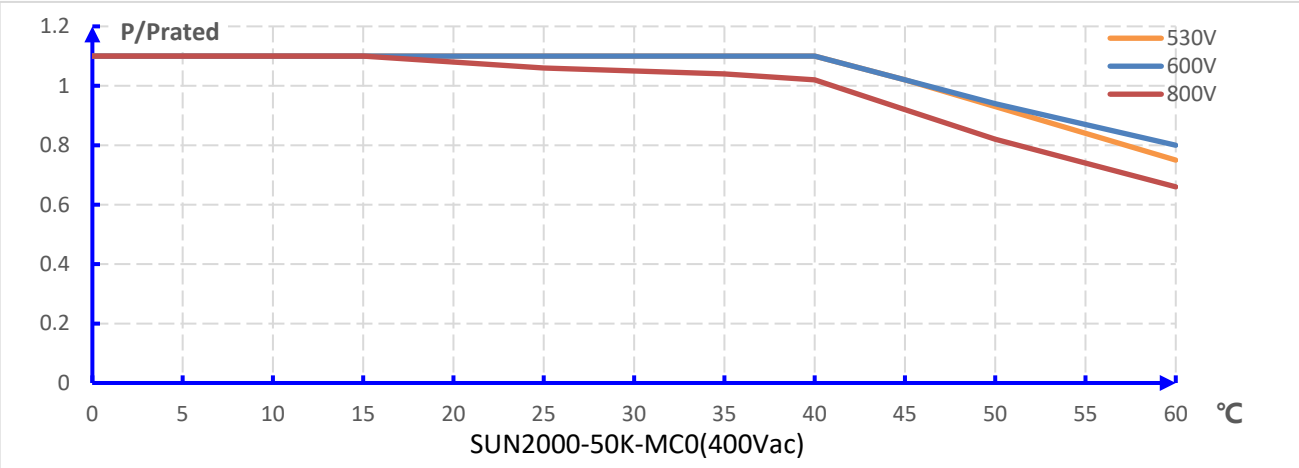
# Power De-rating Curve VS. Ambient Temperature

Power De-rating Curve VS. Ambient Temperature of SUN2000-50K-MC0



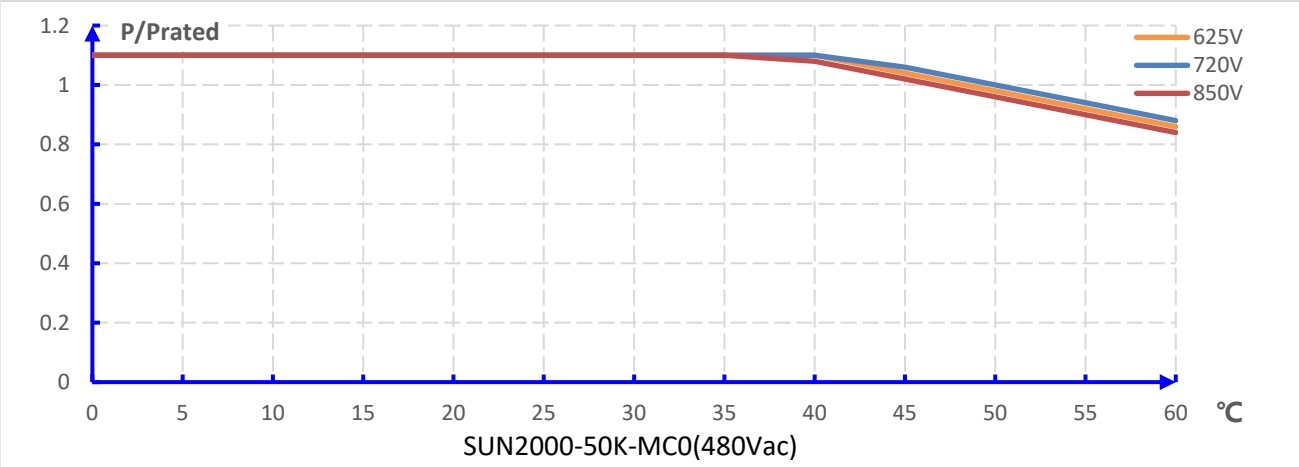

Air speed: 0.5m/s, Grid Voltage：380, PF=1

| Model | MPPT Input Voltage | AC Output Power（kVA） | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 25°C | 35°C | 40°C | 45°C | 50°C | 55°C | 60°C |
| SUN2000-50K-MC0 | 530V | 55 | 55 | 54 | 51 | 45 | 41 | 37 |
| | 600 V | 55 | 55 | 53 | 49.5 | 45.5 | 41.5 | 37.5 |
| | 800 V | 53 | 52 | 50 | 45.5 | 41 | 36 | 33 |




Air speed: 0.5m/s, Grid Voltage：400Vac, PF=1

| Model | MPPT Input Voltage | AC Output Power（kVA） | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 25°C | 35°C | 40°C | 45°C | 50°C | 55°C | 60°C |
| SUN2000-50K-MC0 | 530 V | 55 | 55 | 55 | 51 | 46.5 | 42 | 37.5 |
| | 600 V | 55 | 55 | 55 | 51 | 47 | 43.5 | 40 |
| | 800 V | 53 | 52 | 51 | 46 | 41 | 37 | 33 |

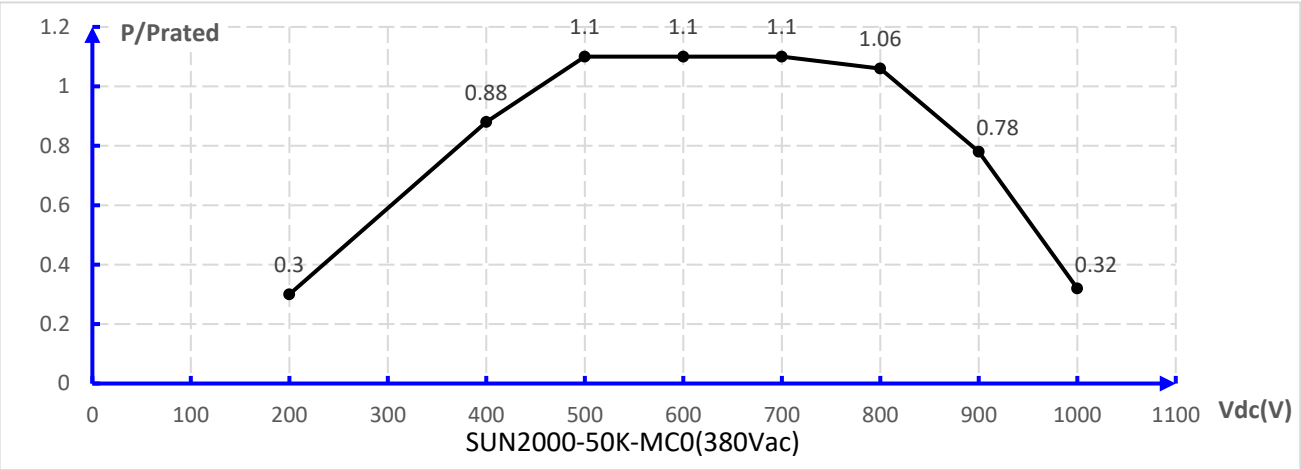



Air speed: 0.5m/s, Grid Voltage：480Vac, PF=1

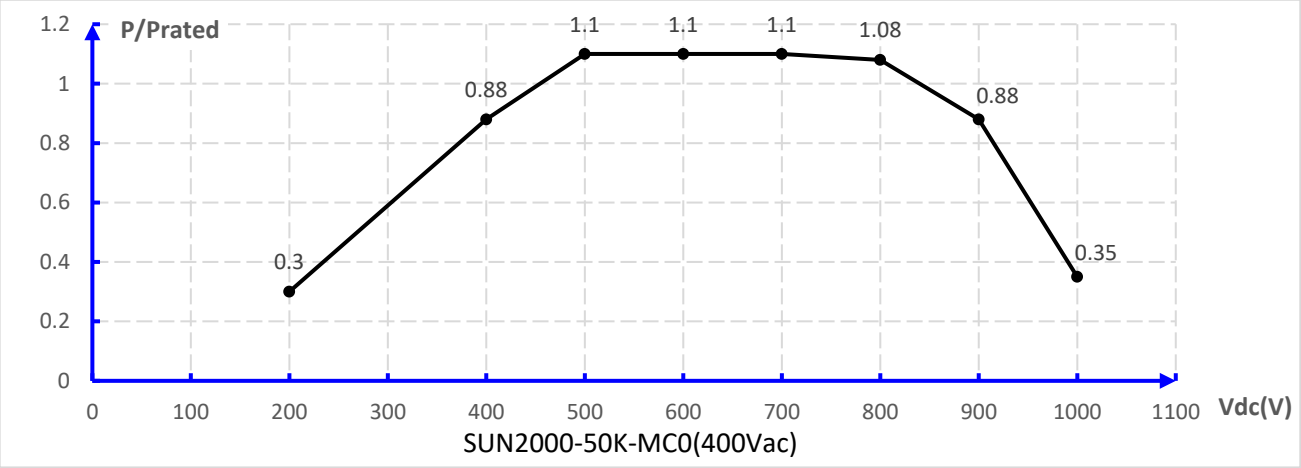
| Model | MPPT Input Voltage | AC Output Power（kVA） | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 25°C | 35°C | 40°C | 45°C | 50°C | 55°C | 60°C |
| SUN2000-50K-MC0 | 625 V | 55 | 55 | 55 | 52 | 49 | 46 | 43 |
| | 720 V | 55 | 55 | 55 | 53 | 50 | 47 | 44 |
| | 850 V | 55 | 55 | 54 | 51 | 48 | 45 | 42 |

# Power- DC Input Voltage Curve

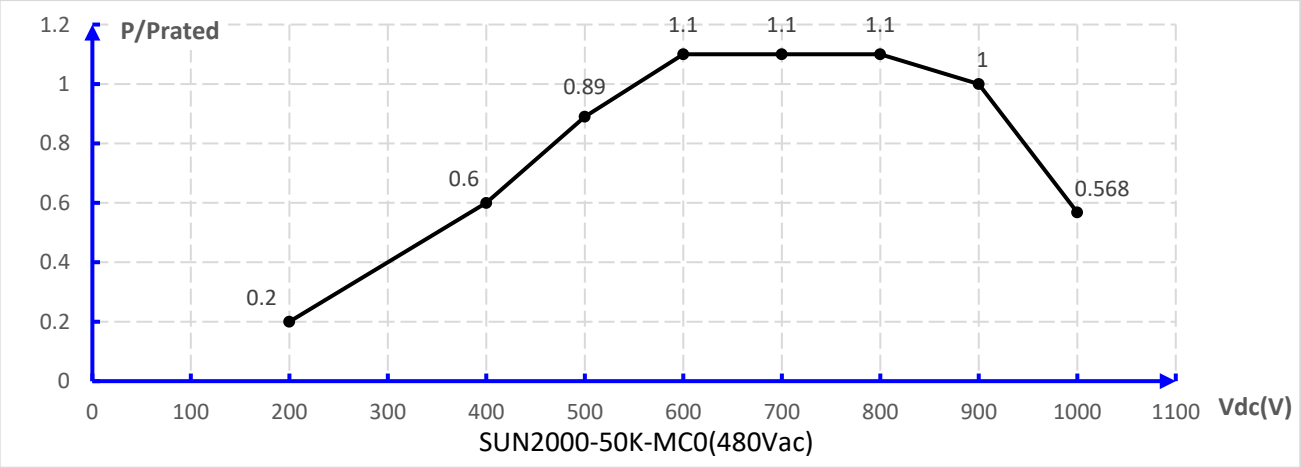
Power-DC Input Voltage Curve of SUN2000-50K-MC0




SUN2000-50K-MC0(380Vac)




SUN2000-50K-MC0(400Vac)

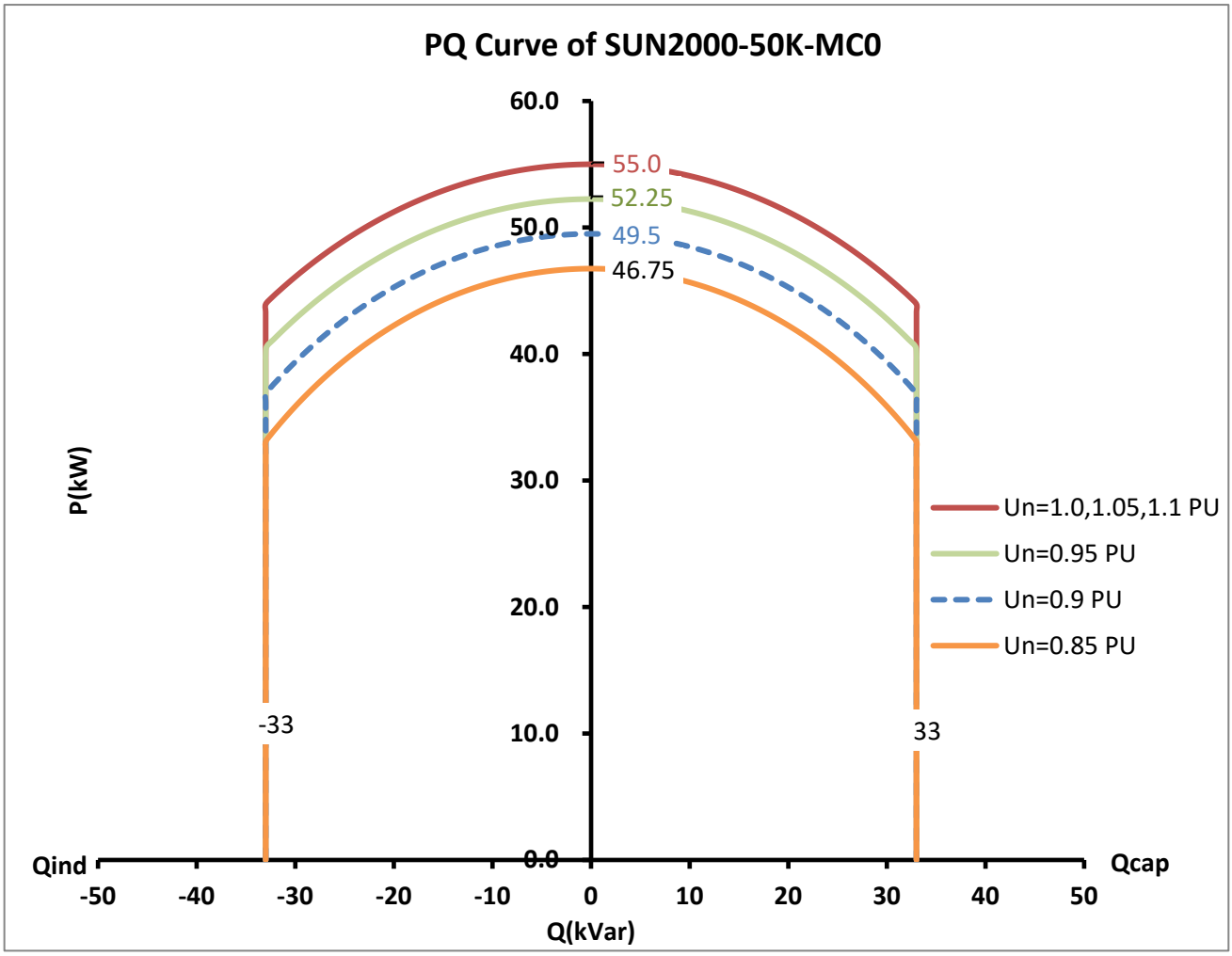



SUN2000-50K-MC0(480Vac)

**Note:** The power-DC input voltage curve is shaped when PF equals 1.0.

# PQ Curve

PQ Curve of SUN2000-50K-MC0




**Note:**

When SUN2000-50K-MC0 operates at grid voltage 1.0/1.05/1.1 p.u., the output power can reach 55kW (when PF=1) or 55kVA.

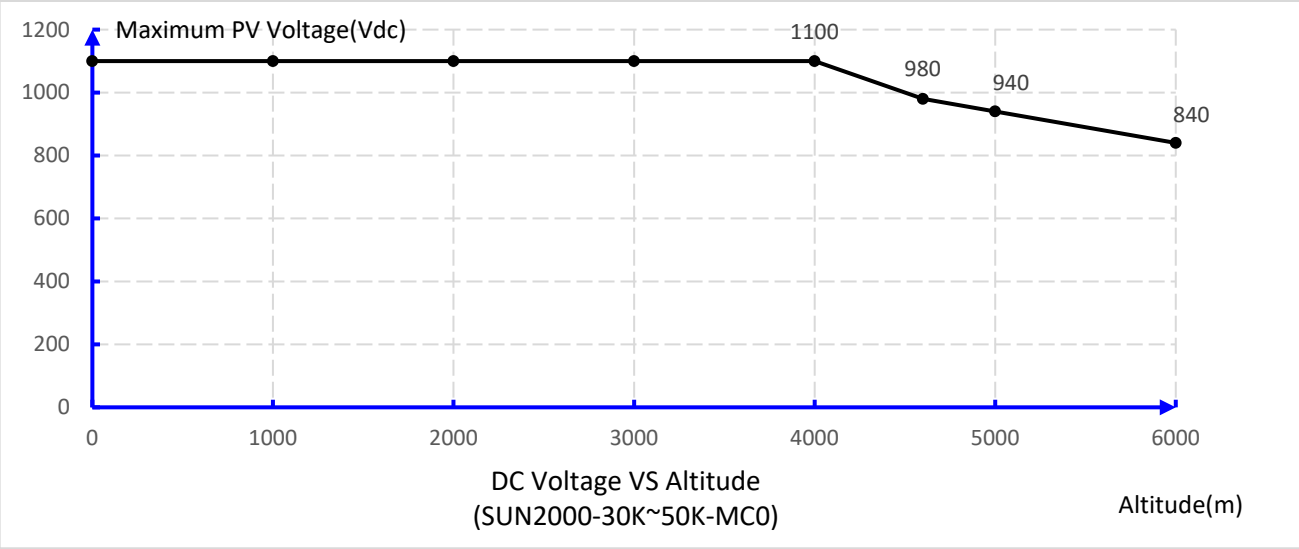
When SUN2000-50K-MC0 operates at grid voltage 0.95 p.u., the output power can reach 52.25kW (when PF=1) or 52.25kVA.

When SUN2000-50K-MC0 operates at grid voltage 0.9 p.u., the output power can reach 49.5kW (when PF=1) or 49.5kVA.

When SUN2000-50K-MC0 operates at grid voltage 0.85 p.u., the output power can reach 46.75kW (when PF=1) or46.75kVA.

# DC Voltage Curve Vs Altitude

DC Voltage Curve of SUN2000-50K-MC0:




**Note:**

The power of SUN2000 inverter doesn't derate when altitude ≤ 4000m.

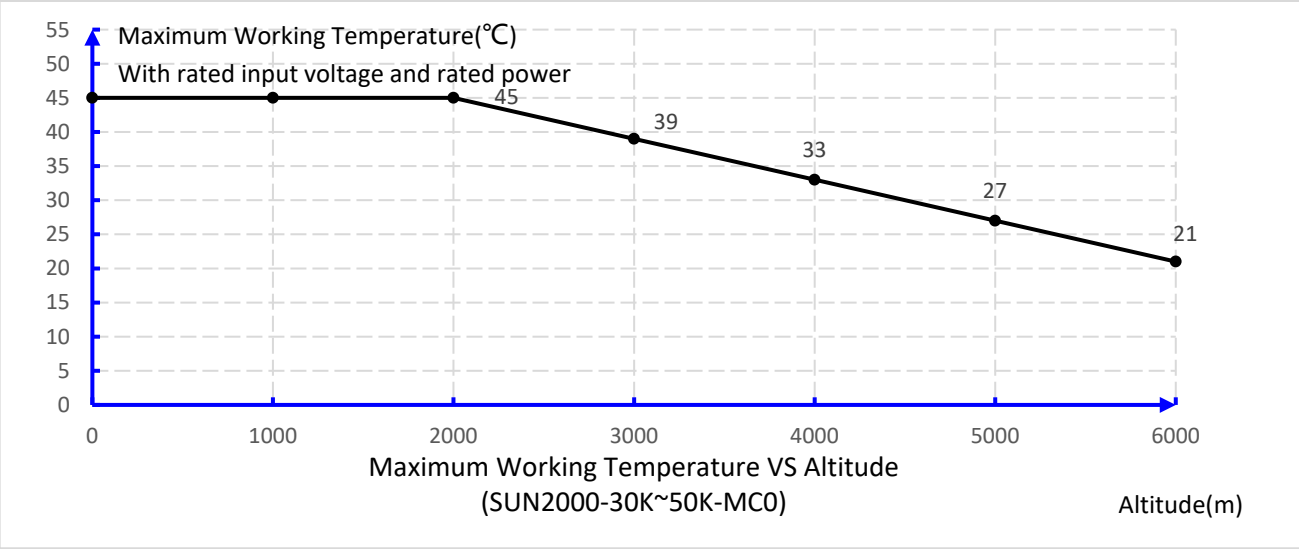
When the altitude is greater than 4000m and less than 4600m, DC voltage derating of SUN2000 inverter should be taken into consideration and DC voltage derates in accordance with 20V/100m.

When the altitude is greater than 4600m and less than 6000m, DC voltage derating of SUN2000 inverter should be taken into consideration and DC voltage derates in accordance with 10V/100m.

The rated AC voltage of the SUN2000 inverter will not be affected by the altitude.

# Maximum Working Temperature Vs Altitude

Maximum Working Temperature Vs Altitude SUN2000-50K-MC0:




**Note:**

The maximum working temperature is the ambient temperature below which SUN2000 can output rated power without de-rating.

When the altitude rises, the cooling capacity of the inverters derates. So the internal temperature of inverters in the high altitude area will be higher and severer than that in the low altitude area.

When altitude > 2000m, the maximum working temperature of SUN2000 should derate by altitude, and it derates in accordance with 6℃/1000m.