

Derating Curve

1PH 3-6kTLM-V3

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1. Revisione

Rev.	Date	Author	Description
00	08/01/2025	L. Aita	First Release

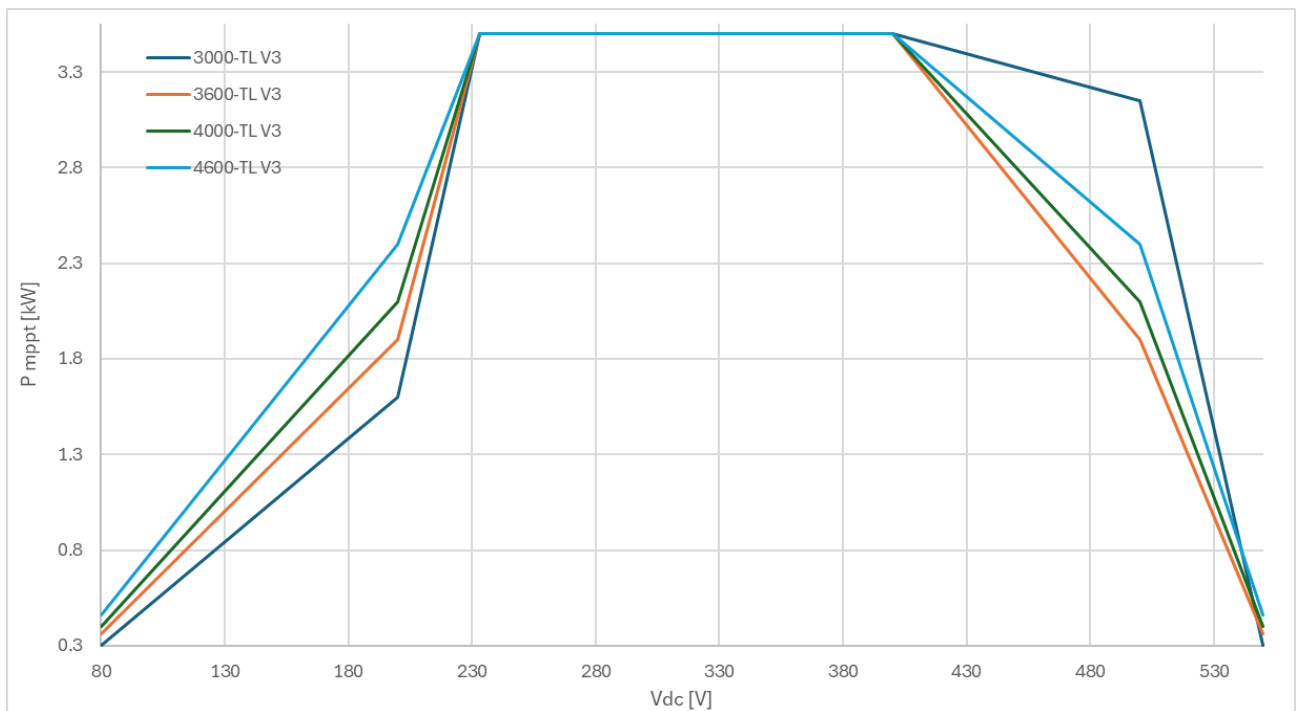
2. Description

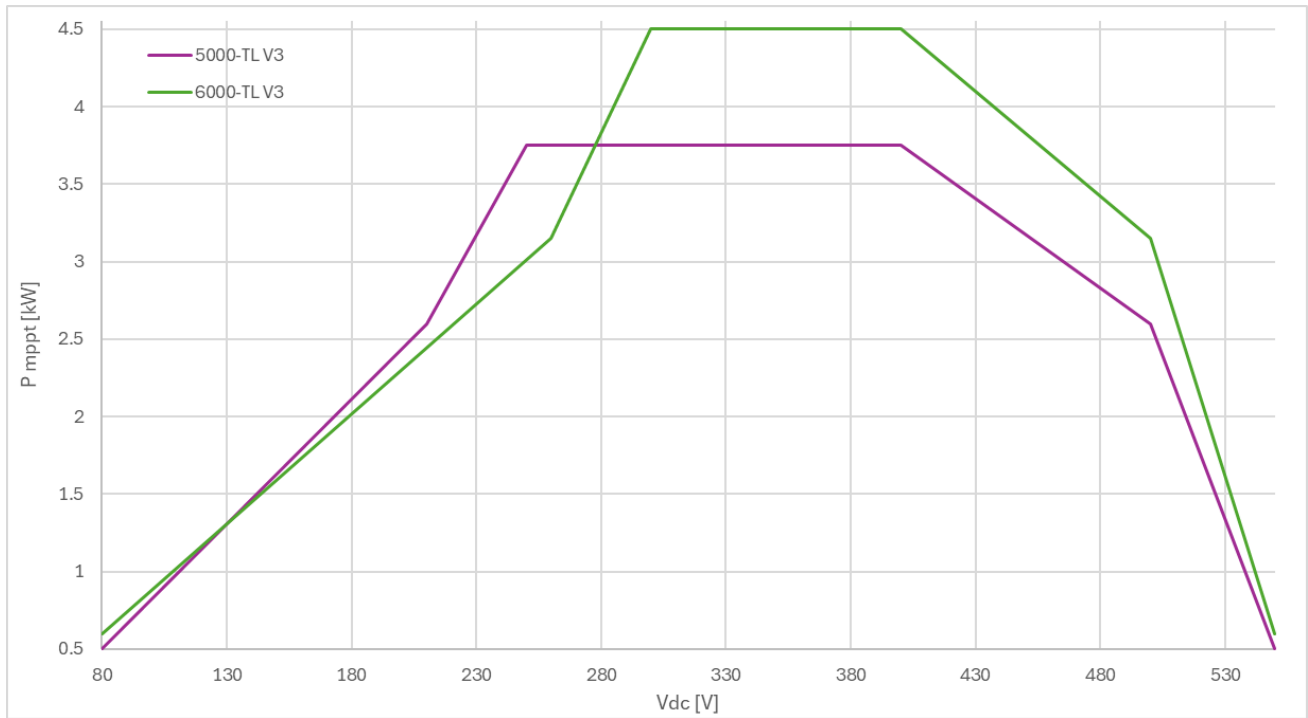
With this document, we collect all the power derating curves. The kinds of derating are mainly three :

- DC Voltage derating
- AC Voltage derating
- Temperature derating

2.1. DC Voltage Derating

The derating curve looking the DC Voltage follow the figure below





Below, a table that describe the value written before:

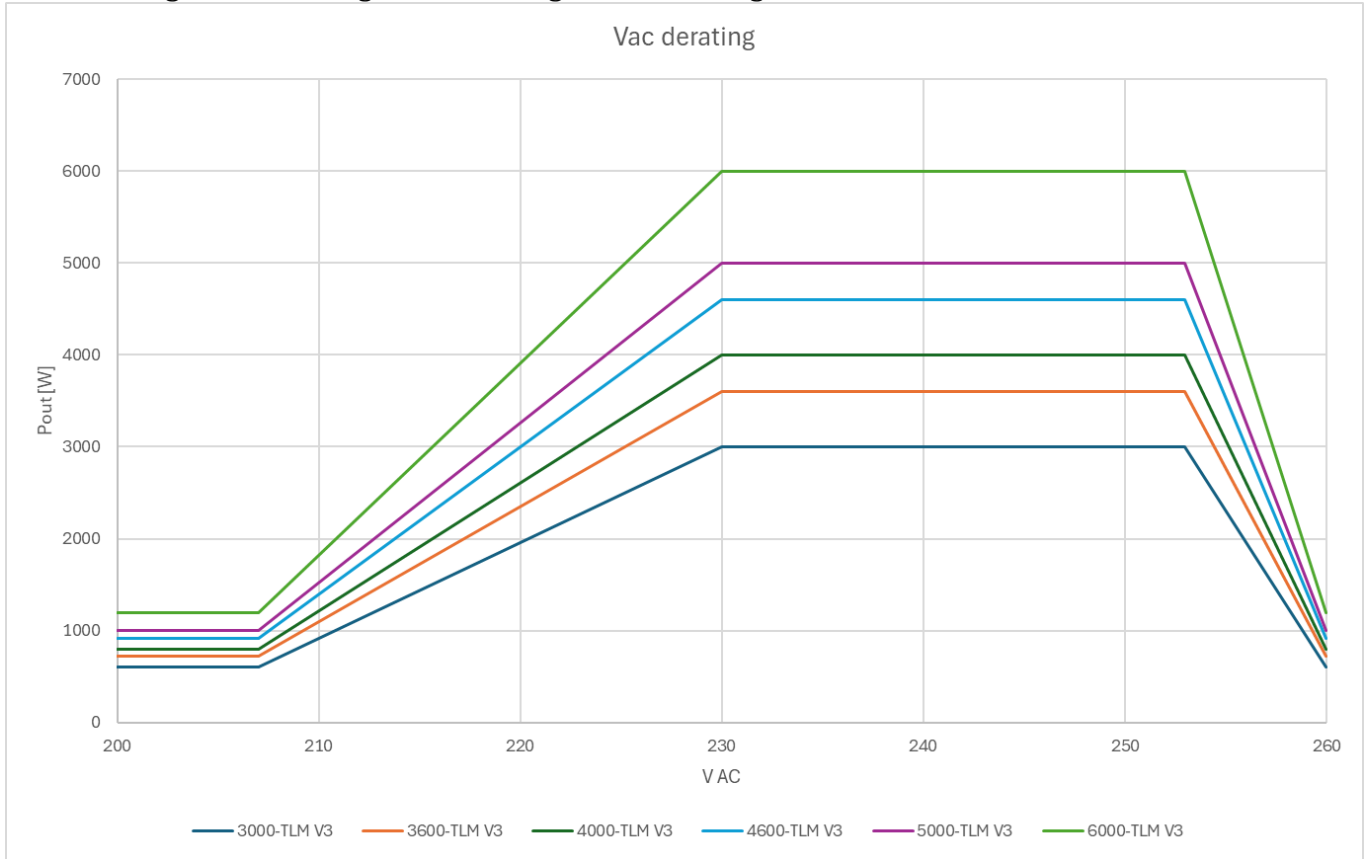
models	P1(W)	P2(W)	P3(W)	V0(V)	V1(V)	V2(V)	V3(V)	V4(V)	V5(V)
3KW	3500	1600	300	80	200	233.3	400	500	550
3.6KW	3500	1900	360	80	200	233.3	400	500	550
4KW	3500	2100	400	80	200	233.3	400	500	550
4.6KW	3500	2400	460	80	200	233.3	400	500	550
5KW	3750	2600	500	80	210	250	400	500	550
6KW	4500	3150	600	80	260	300	400	500	550

where:

- V0 is the minimum voltage for erogate the minimum inverter power
- V1 is the DC voltage where the slope change before V2
- V2 is the minimum DC voltage for erogate the maximum inverter power
- V3 is the maximum DC voltage for erogate the maximum inverter power
- V4 is the DC voltage where the slope change after V3
- V5 is the maximum DC voltage for erogate the minimum inverter power
- P1 is the nominal inverter active power
- P2 is the power when the slope change
- P3 is the minimum input limit power

2.2. AC Voltage Derating

The derating curve looking the AC Voltage follow the figure below



Below, a table that describe the value written before:

models	P1(W)	P2(W)	V0(V)	V1(V)	V2(V)	V3(V)
3KW	3000	600	/	207	/	/
3.6KW	3600	720	/	207	/	/

4KW	4000	800	/	207	/	/
4.6KW	4600	920	/	207	/	/
5KW	5000	1000	/	207	/	/
6KW	6000	1200	/	207	/	/

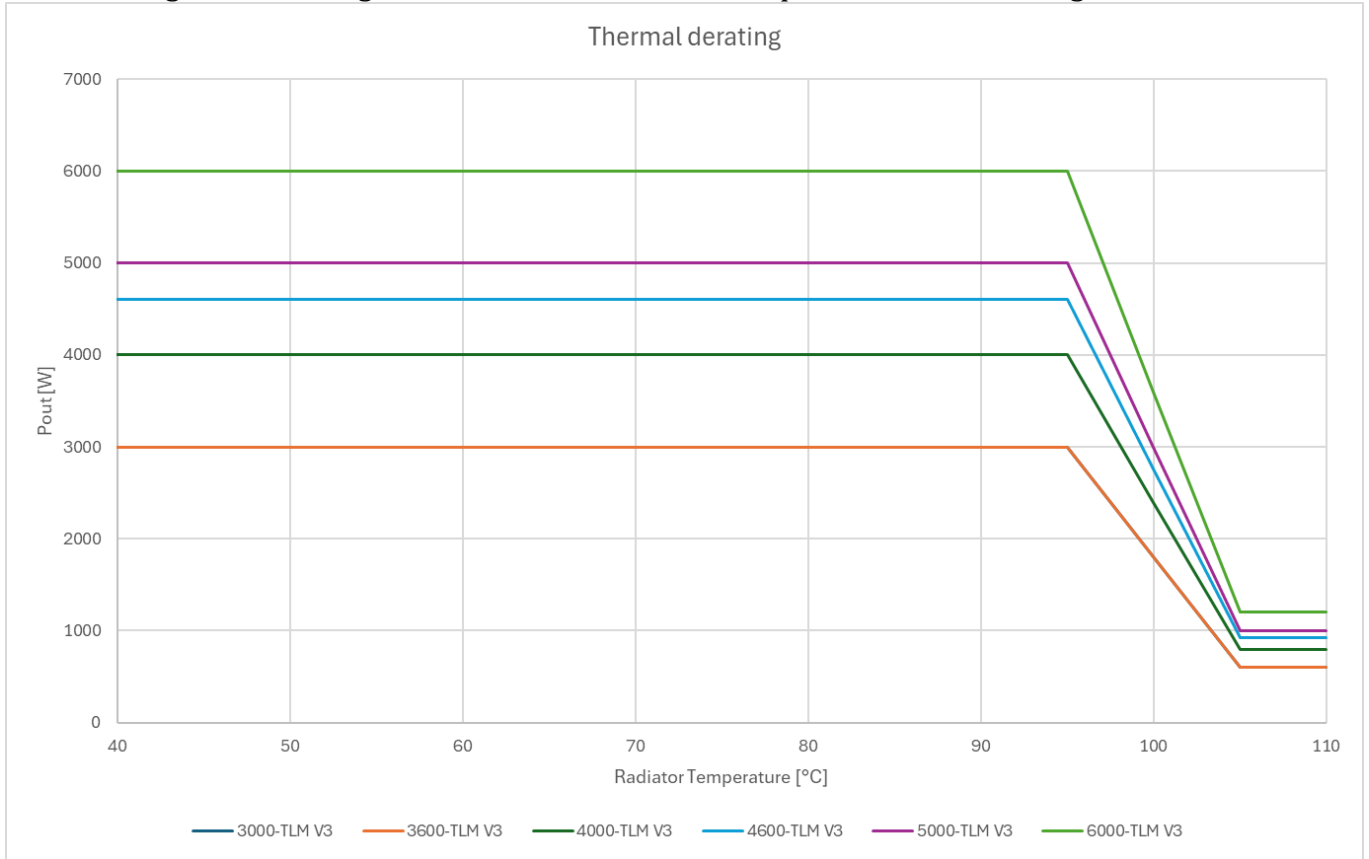
Note: V0,V2,V3 are confirmed according to different safety countries.

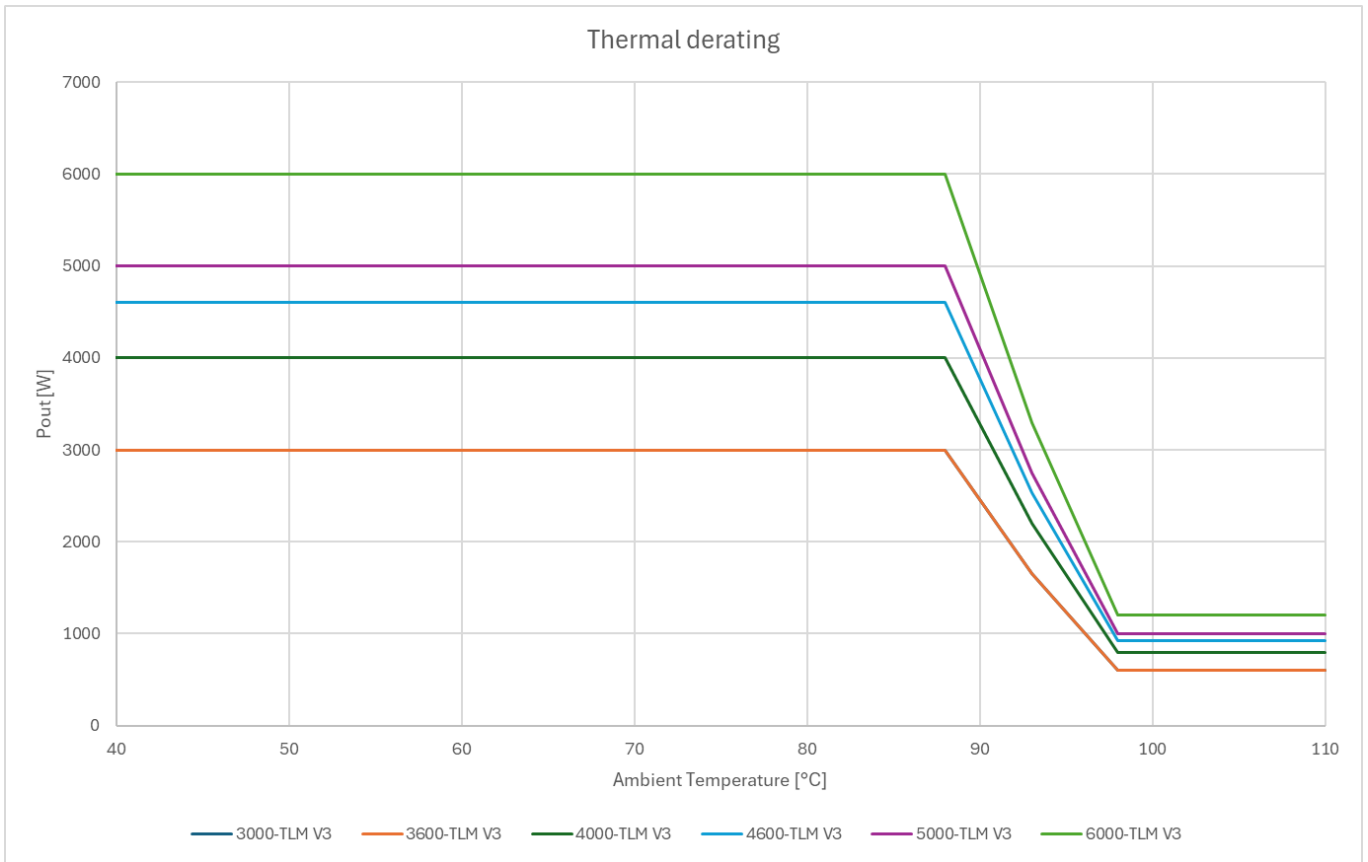
where:

- V0 is the minimum AC voltage for erogate the minimum inverter power
- V1 is the minimum AC voltage for erogate the maximum inverter power
- V2 is the maximum AC voltage for erogate the maximum inverter power
- V3 is the maximum voltage for erogate the minimum inverter power
- P1 is the nominal inverter active power
- P2 is the 20% of P1

2.3. Temperature Derating

The derating curve looking the Ambient or Radiator Temperature follow the figure below





Below, a table that describe the thermal derating for the radiator temperature:

models	P1(W)	P2(W)	T1(°C)	T2(°C)	T3(°C)
3000W	3000	600	95	105	100
3600W	3600	720	95	105	100
4000W	4000	800	95	105	100
4600W	4600	920	95	105	100
5000W	5000	1000	95	105	100
6000W	6000	1200	95	105	100

Note: The minimum power P2 is set at 20% of the rated power P1.

Below, a table that describe the thermal derating for the ambient temperature:

models	P1(W)	P2(W)	T1(°C)	T2(°C)	T3(°C)
3000W	3000	300	88	98	93
3600W	3600	360	88	98	93
4000W	4000	400	88	98	93

4600W	4600	460	88	98	93
5000W	5000	500	88	98	93
6000W	6000	600	88	98	93

Note: The minimum power P2 is set at 10% of the rated power P1.

where:

- T1 is the minimum temperature where the derating starts
- T2 is the maximum temperature allowed for the inverter to erogate power
- T3 is the temperature where the error "IDxx OverTemperature" is raised-out
- P1 is the nominal inverter active power
- P2 is the lowest power allowed by the thermal derating