

Datasheet for #sb3247 DN

Recommendations:

Please read the starter kit user manual, if available, and have a look at the FAQ at <http://www.alpeslasers.ch/alfaqa.pdf>

WARNING: Operating the laser with longer pulses, higher repetition rate, higher voltage or higher current than specified in this document may cause damage. It will result in loss of warranty, unless agreed upon with Alpes Lasers!

WARNING: Beware of the polarity of the laser. This laser has to be powered with negative bias on the laser contact (= bonding pad, corresponding to the label "laser" on the LLH) and the positive bias on the base contact (= submount, corresponding to the label "base" on the LLH).

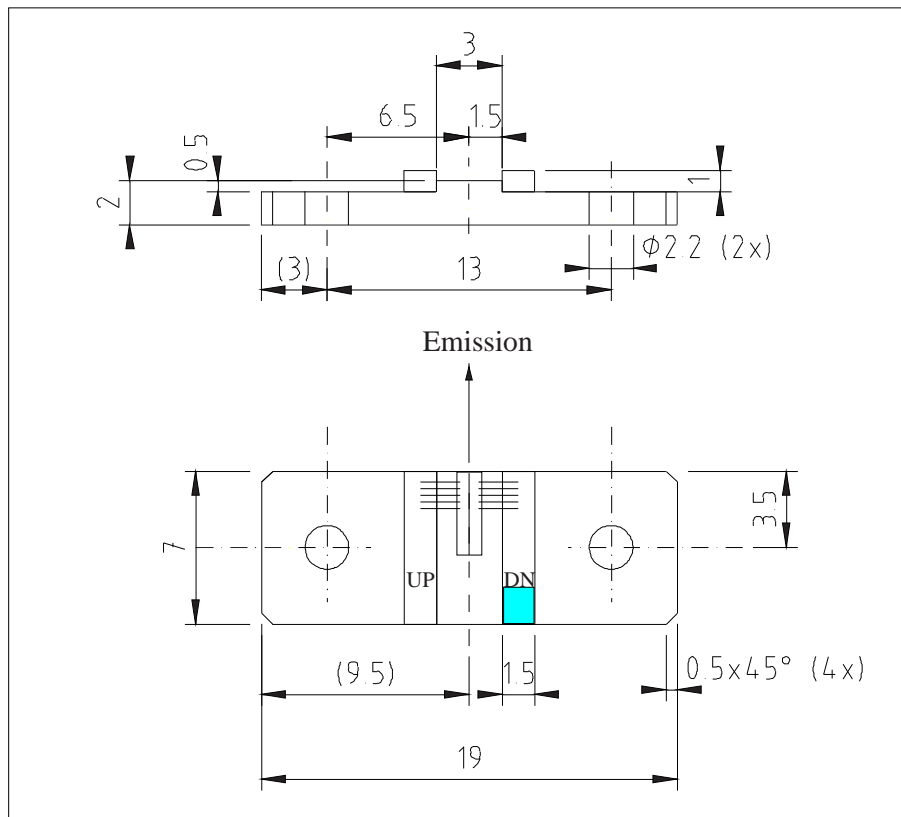


Figure 1: Support mounting for #sb3247 DN (please note that the laser is connected to the DN pad drawn in blue)

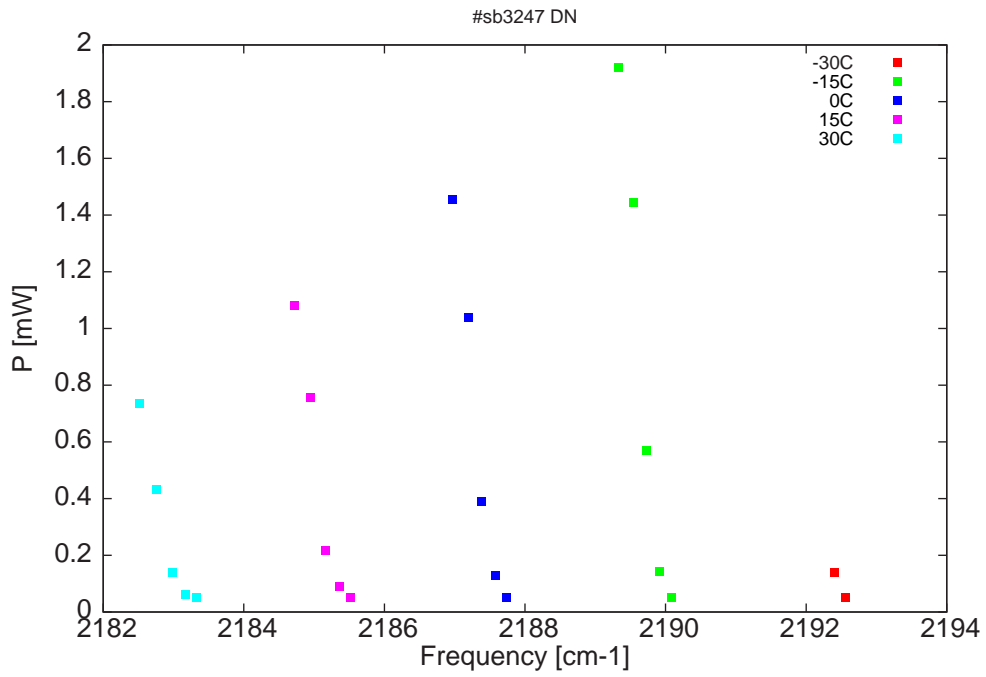


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

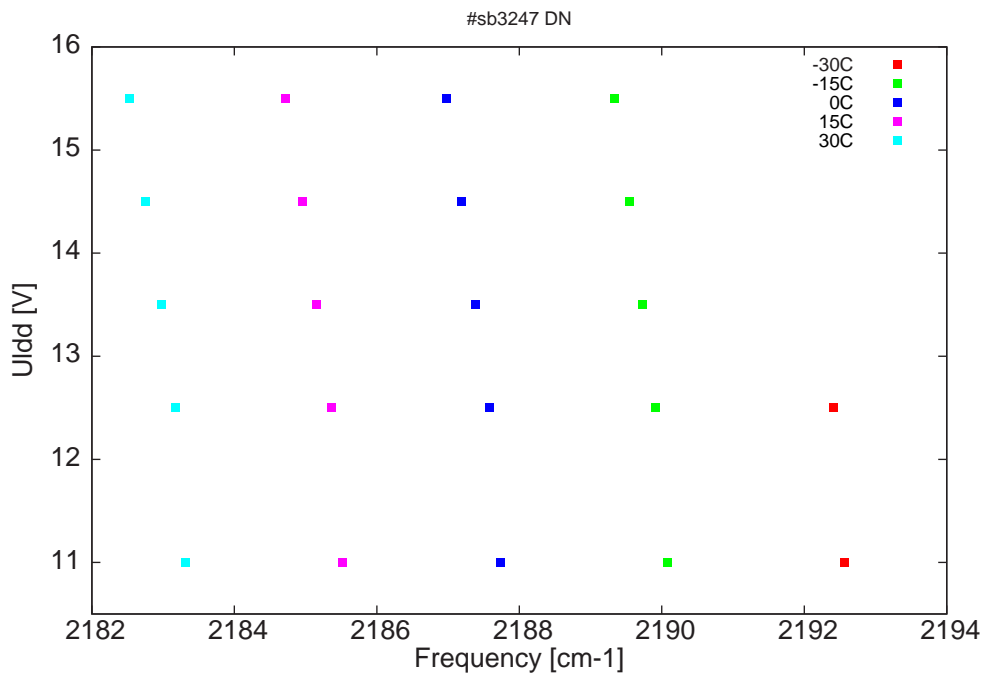


Figure 3: DC voltage fed to LDD (U_{ldd}) as a function of the singlemode emission frequencies and temperatures

| λ [nm] | ν [cm ⁻¹] | P[mW] | Temp[°C] | U_{LDD} [V] | I_{pulse} [A] |
|----------------|---------------------------|-------|----------|---------------|-----------------|
| 4560.9 | 2192.6 | 0.1 | -30 | 11 | 0.23 |
| 4561.2 | 2192.4 | 0.1 | -30 | 12.5 | 0.4 |
| 4566 | 2190.1 | 0.1 | -15 | 11 | 0.25 |
| 4566.4 | 2189.9 | 0.1 | -15 | 12.5 | 0.42 |
| 4566.8 | 2189.7 | 0.6 | -15 | 13.5 | 0.57 |
| 4567.2 | 2189.5 | 1.4 | -15 | 14.5 | 0.75 |
| 4567.6 | 2189.3 | 1.9 | -15 | 15.5 | 0.91 |
| 4570.9 | 2187.7 | 0.1 | 0 | 11 | 0.27 |
| 4571.3 | 2187.6 | 0.1 | 0 | 12.5 | 0.44 |
| 4571.7 | 2187.4 | 0.4 | 0 | 13.5 | 0.58 |
| 4572.1 | 2187.2 | 1 | 0 | 14.5 | 0.75 |
| 4572.5 | 2187 | 1.5 | 0 | 15.5 | 0.94 |
| 4575.6 | 2185.5 | 0.1 | 15 | 11 | 0.27 |
| 4575.9 | 2185.4 | 0.1 | 15 | 12.5 | 0.45 |
| 4576.3 | 2185.2 | 0.2 | 15 | 13.5 | 0.59 |
| 4576.8 | 2185 | 0.8 | 15 | 14.5 | 0.77 |
| 4577.3 | 2184.7 | 1.1 | 15 | 15.5 | 0.93 |
| 4580.2 | 2183.3 | 0.1 | 30 | 11 | 0.29 |
| 4580.5 | 2183.2 | 0.1 | 30 | 12.5 | 0.48 |
| 4580.9 | 2183 | 0.1 | 30 | 13.5 | 0.62 |
| 4581.4 | 2182.8 | 0.4 | 30 | 14.5 | 0.78 |
| 4581.9 | 2182.5 | 0.7 | 30 | 15.5 | 0.95 |

Table 1 : singlemode optical output power as function of operating parameters

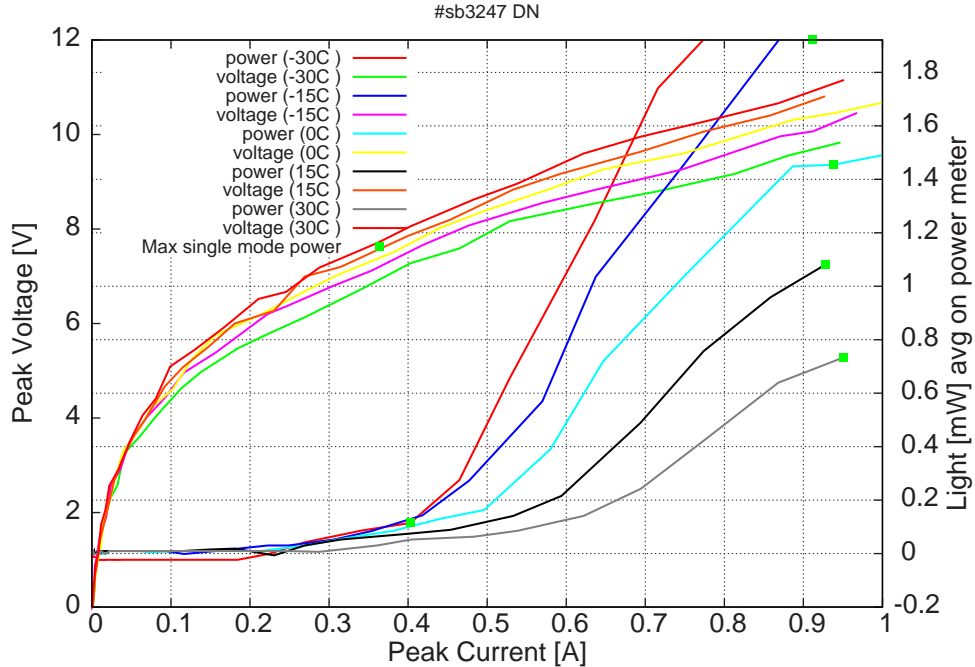


Figure 4: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser, 2.5 μ s period) (the solid squares indicate the maximum singlemode emitted power)

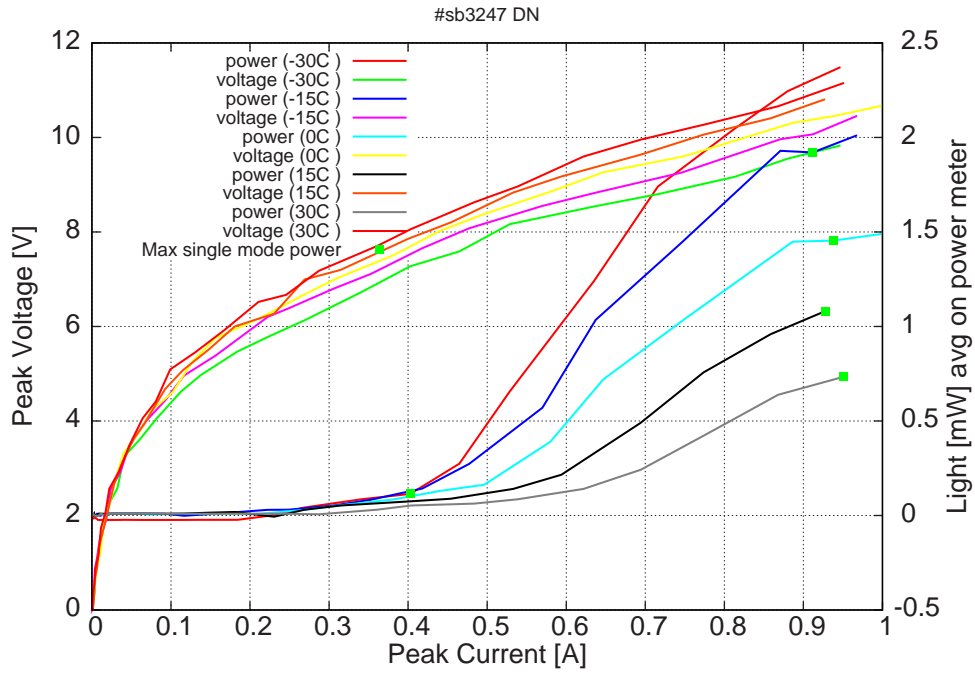


Figure 5: peak voltage and average power vs peak current at 2% duty-cycle (50ns pulses on the laser, $2.5\mu\text{s}$ period) (including the multimode region)

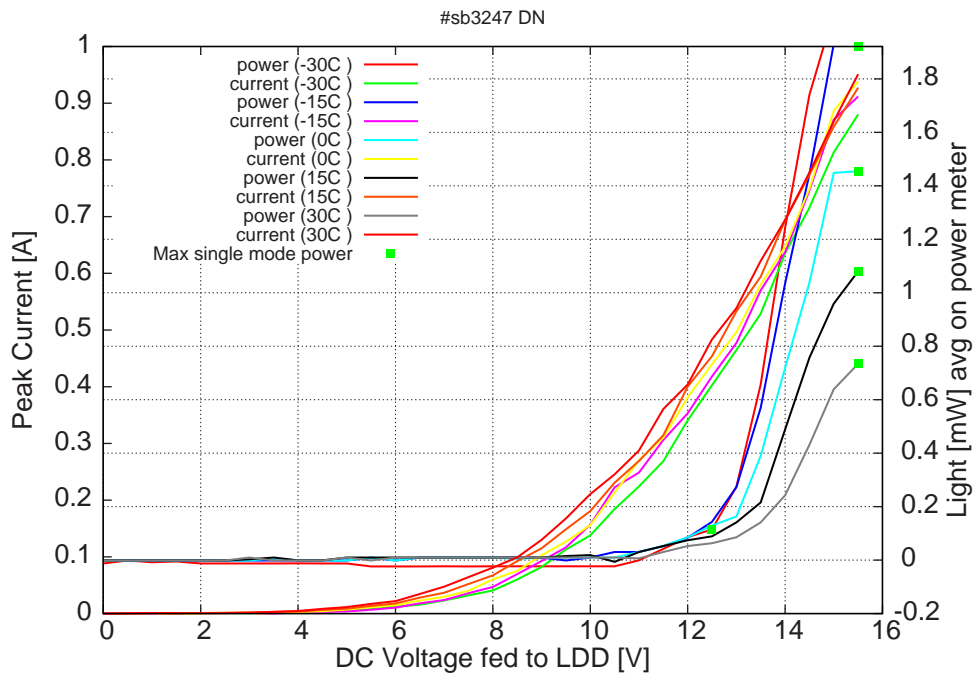


Figure 6: peak current and average power vs LDD voltage at 2% duty-cycle (50ns pulses on the laser, $2.5\mu\text{s}$ period) (the solid squares indicate the maximum singlemode emitted power)

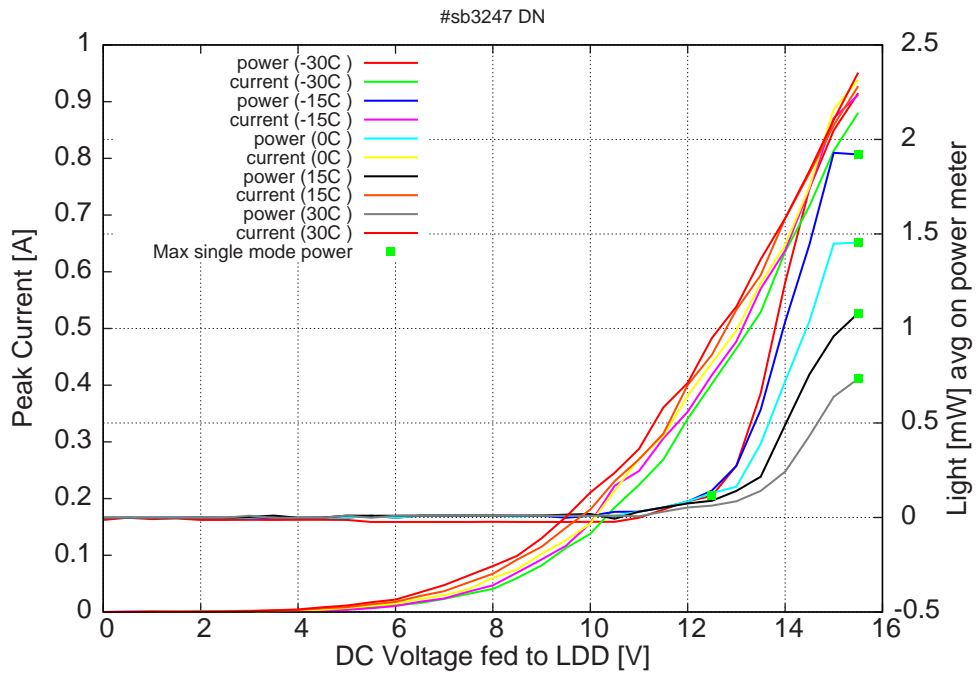
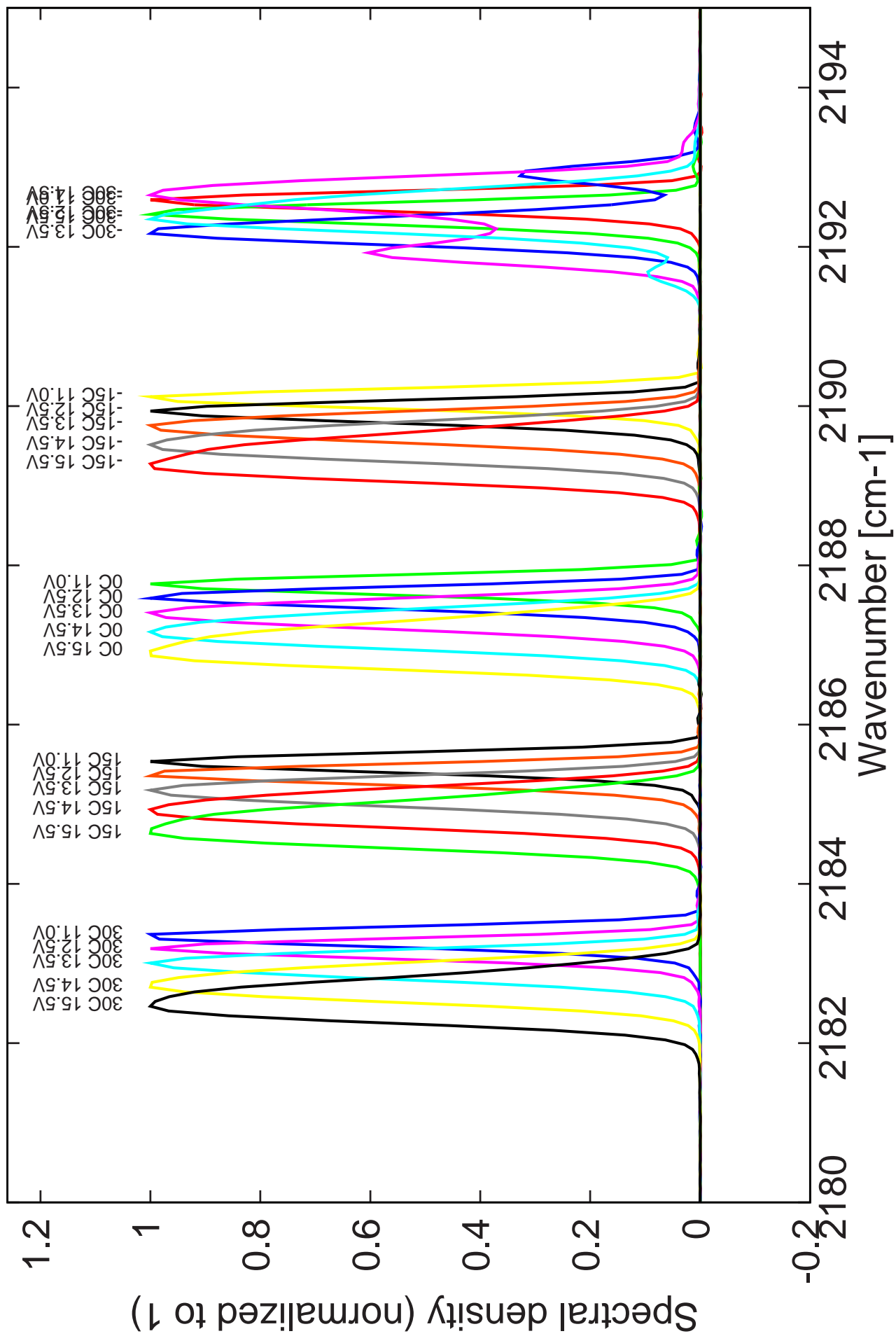


Figure 7: peak current and average power vs LDD voltage at 2% duty-cycle (50ns pulses on the laser, 2.5 μ s period) (including the multimode region)

Figure 6: spectra at different temperatures for various LDD voltages



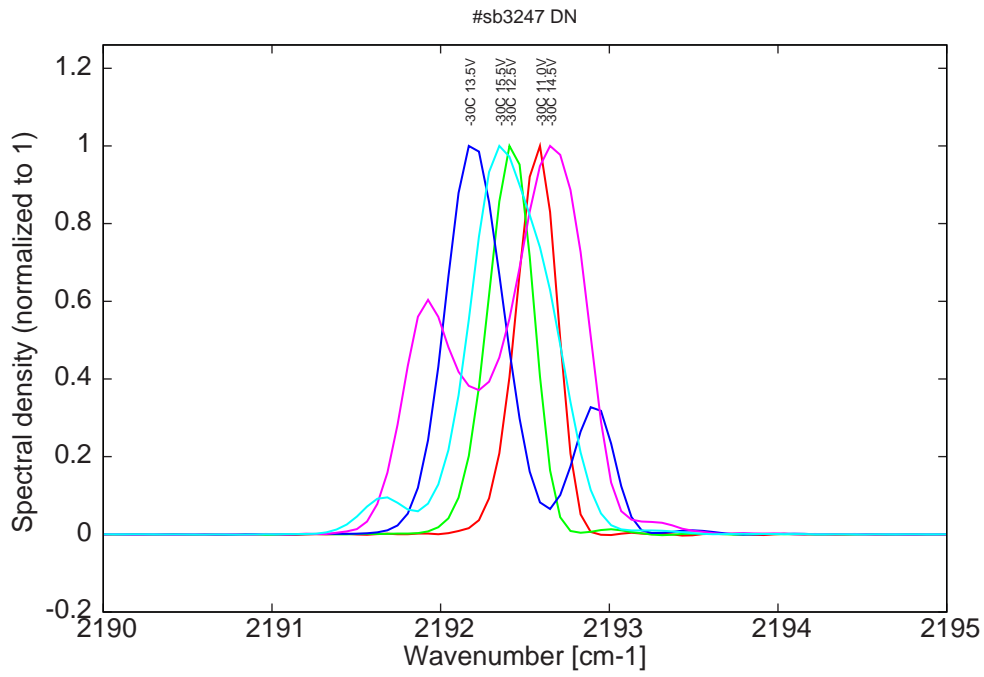


Figure 8: spectra at -30C for various LDD voltage (monomode up to 12.5V on LDD)

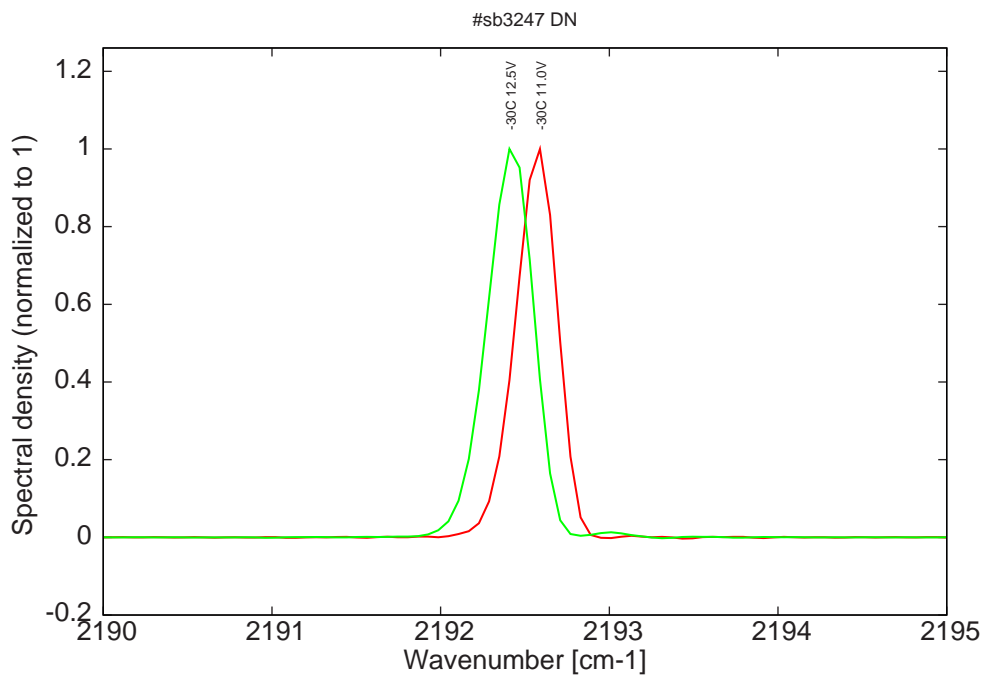
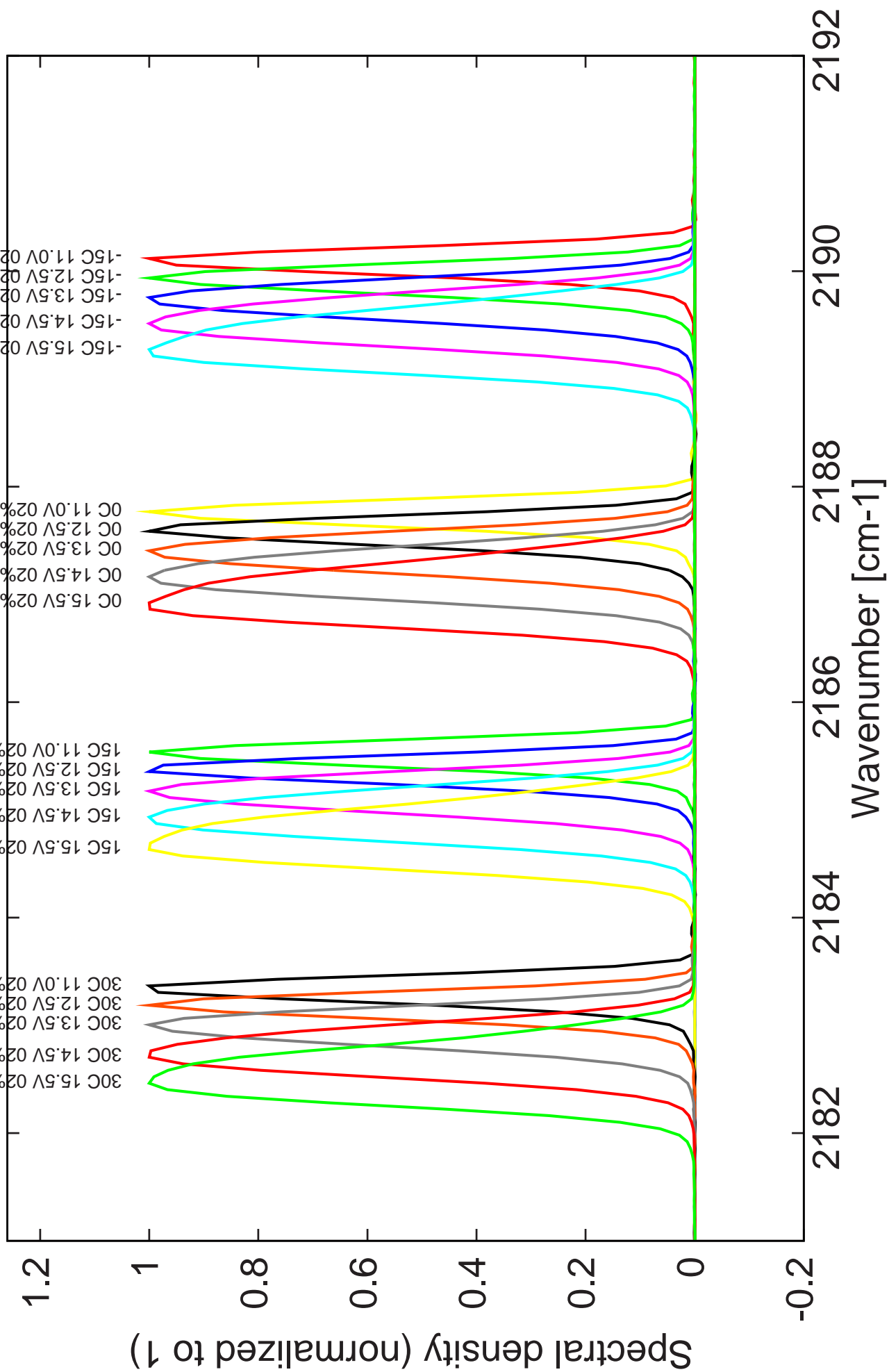


Figure 9: spectra at -30C for various LDD voltage (monomode range)

Figure 9: spectra between -15C and 30C for various LDD voltage (all monomode)



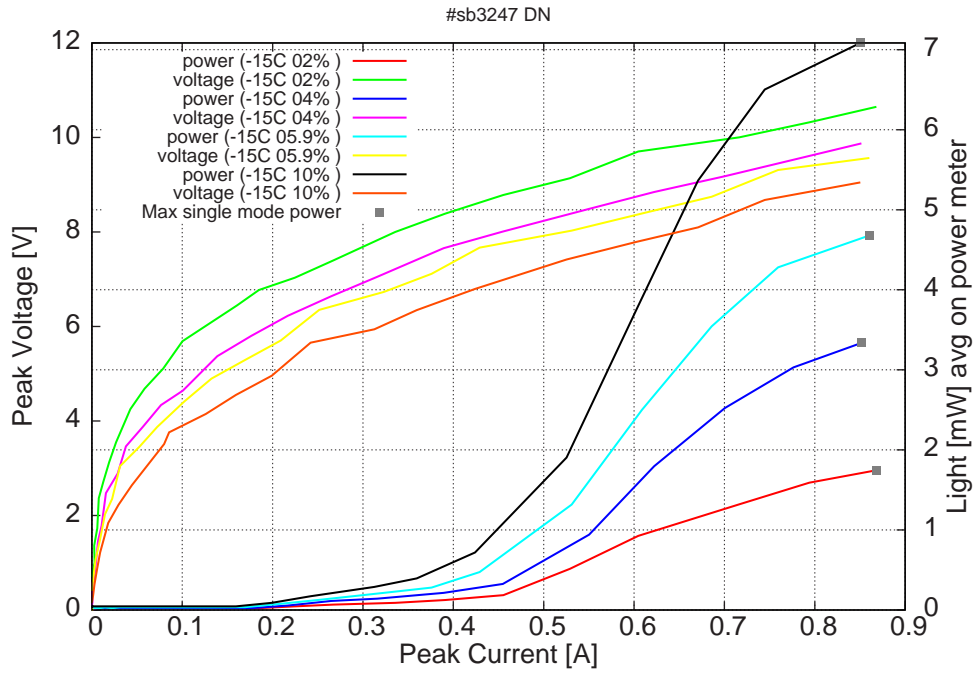


Figure 10: peak voltage and average power vs peak current for various duty-cycle at -15C (100ns pulses on the laser) (the solid squares indicate the maximum singlemode emitted power)

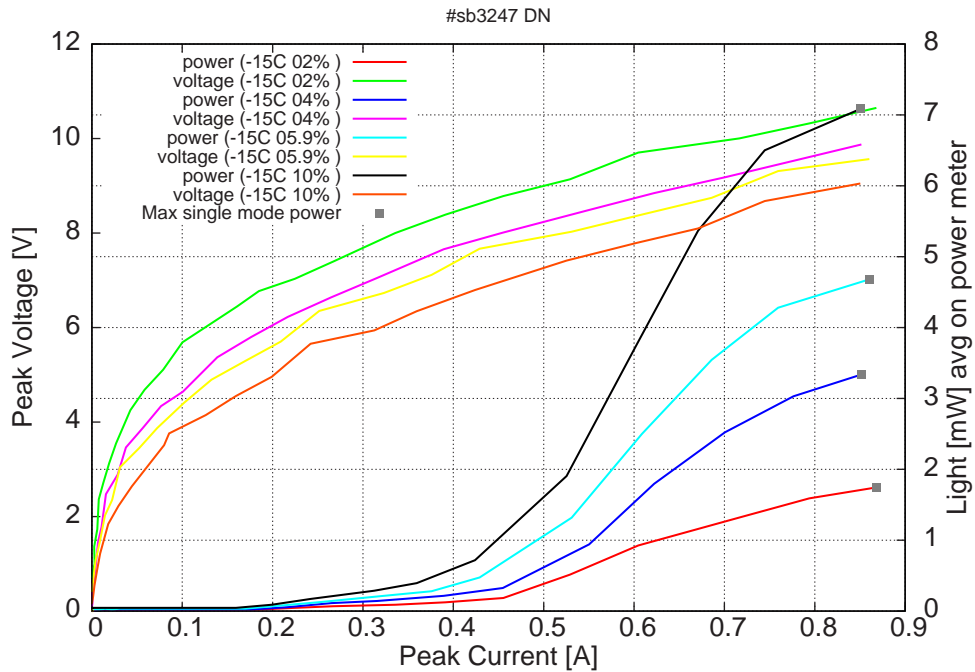


Figure 11: peak voltage and average power vs peak current for various duty-cycle at -15C (100ns pulses on the laser) (including the multimode region)

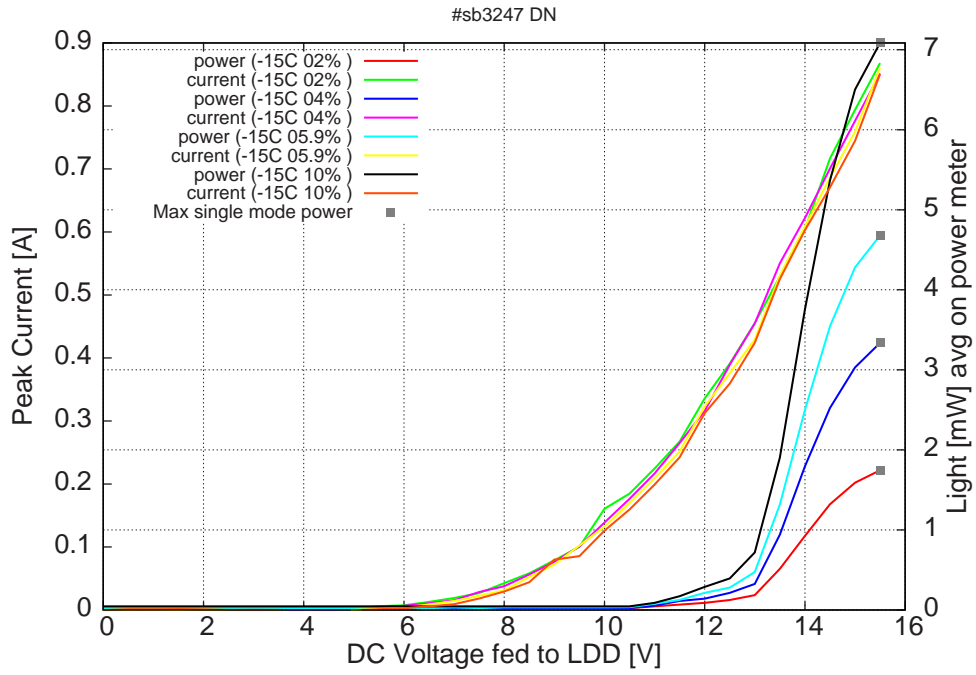


Figure 12: peak current and average power vs LDD voltage for various duty-cycle at -15C (100ns pulses on the laser) (the solid squares indicate the maximum singlemode emitted power)

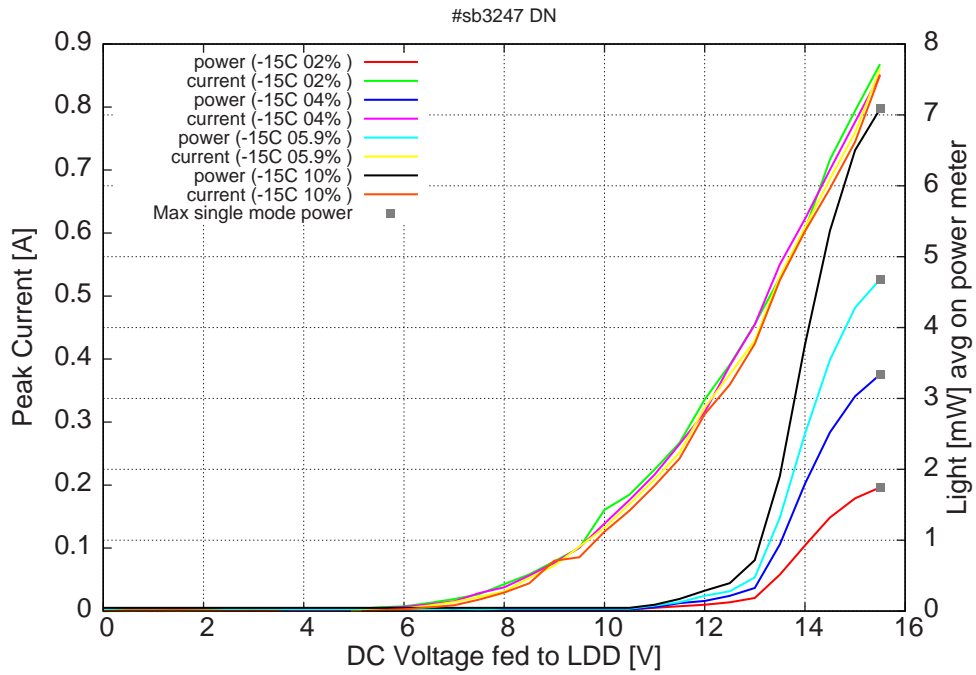


Figure 13: peak current and average power vs LDD voltage for various duty-cycle at -15C (100ns pulses on the laser) (including the multimode region)

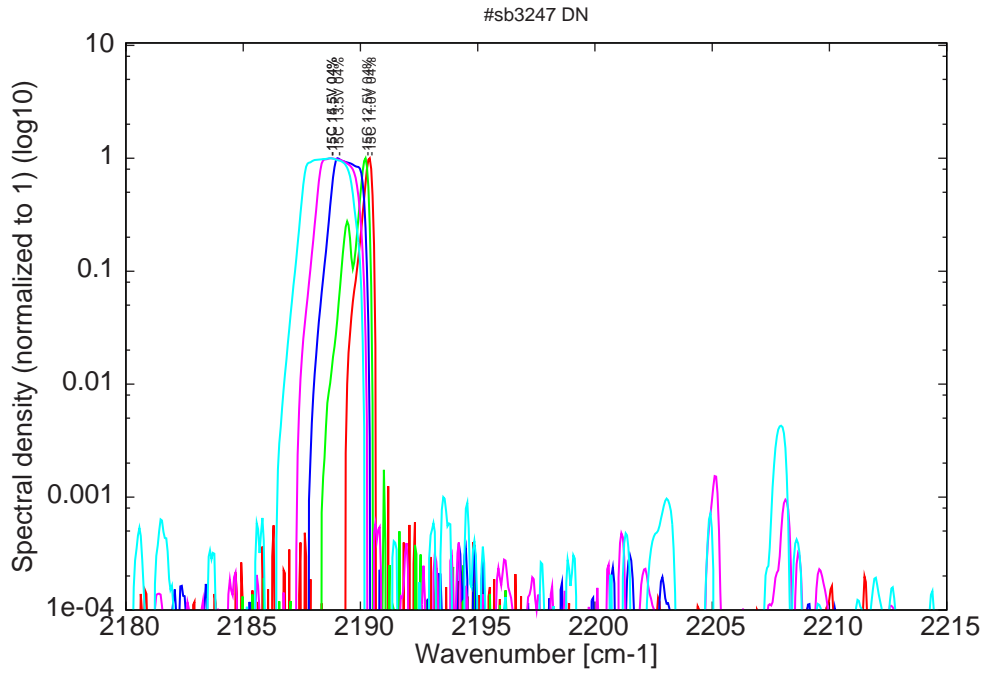


Figure 14: spectra at -15C at 4% duty-cycle (100ns pulses) for various LDD voltages (monomode up to 13.5V on LDD)

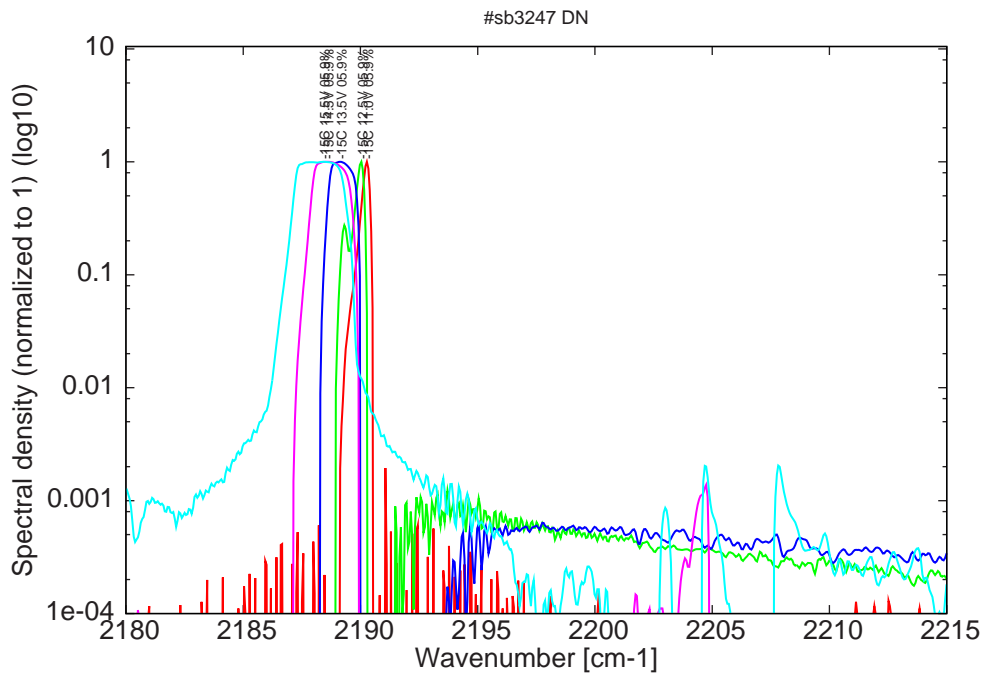


Figure 15: spectra at -15C at 6% duty-cycle (100ns pulses) for various LDD voltages (monomode up to 13.5V on LDD)

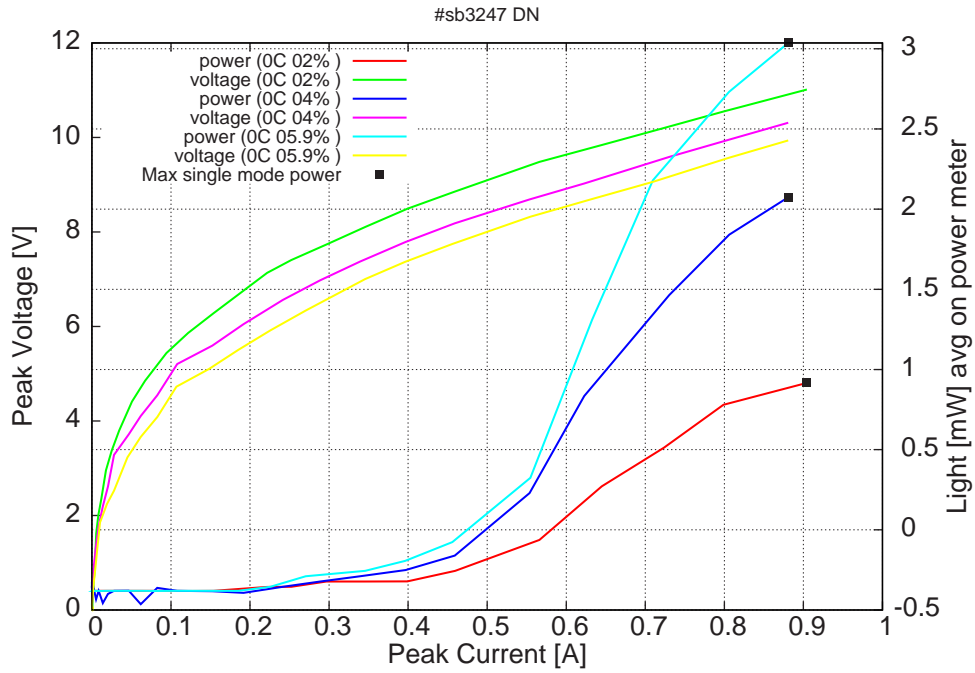


Figure 16: peak voltage and average power vs peak current for various duty-cycle at OC (100ns pulses on the laser) (the solid squares indicate the maximum singlemode emitted power)

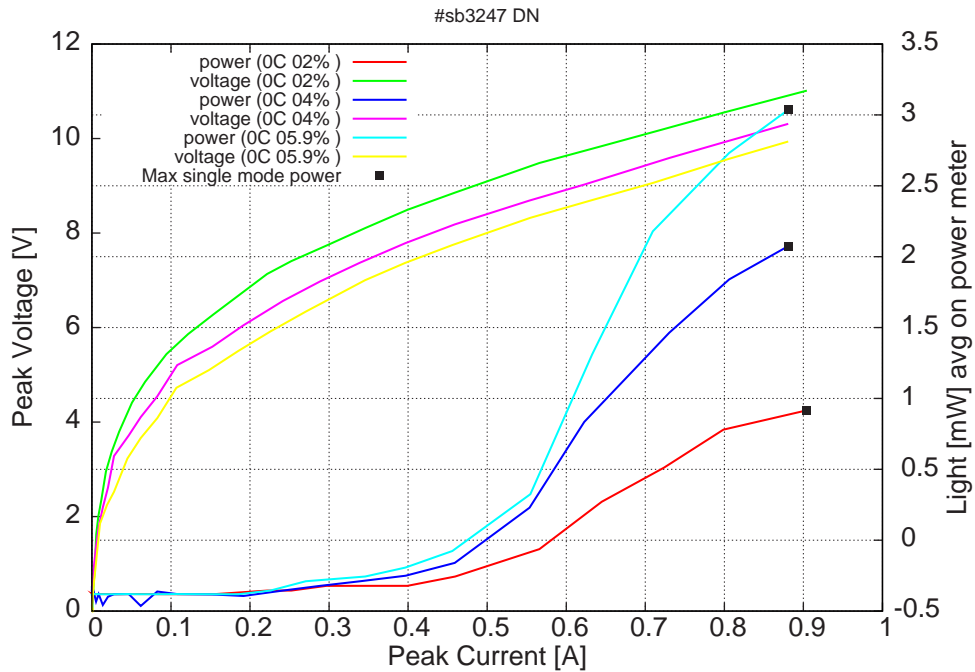


Figure 17: peak voltage and average power vs peak current for various duty-cycle at OC (100ns pulses on the laser) (including the multimode region)

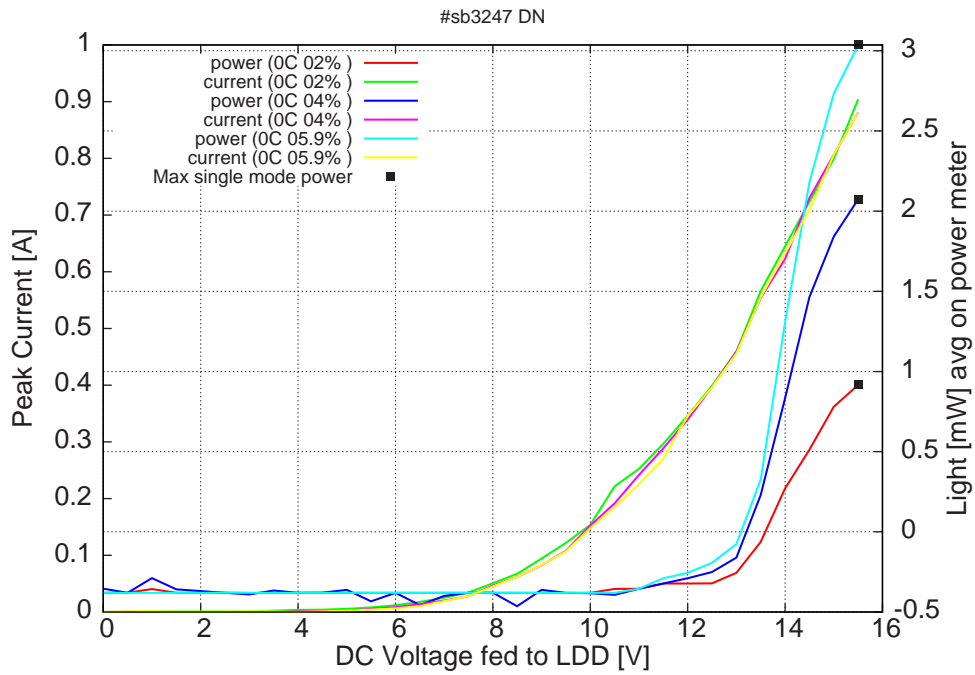


Figure 18: peak current and average power vs LDD voltage for various duty-cycle at OC (100ns pulses on the laser) (the solid squares indicate the maximum singlemode emitted power)

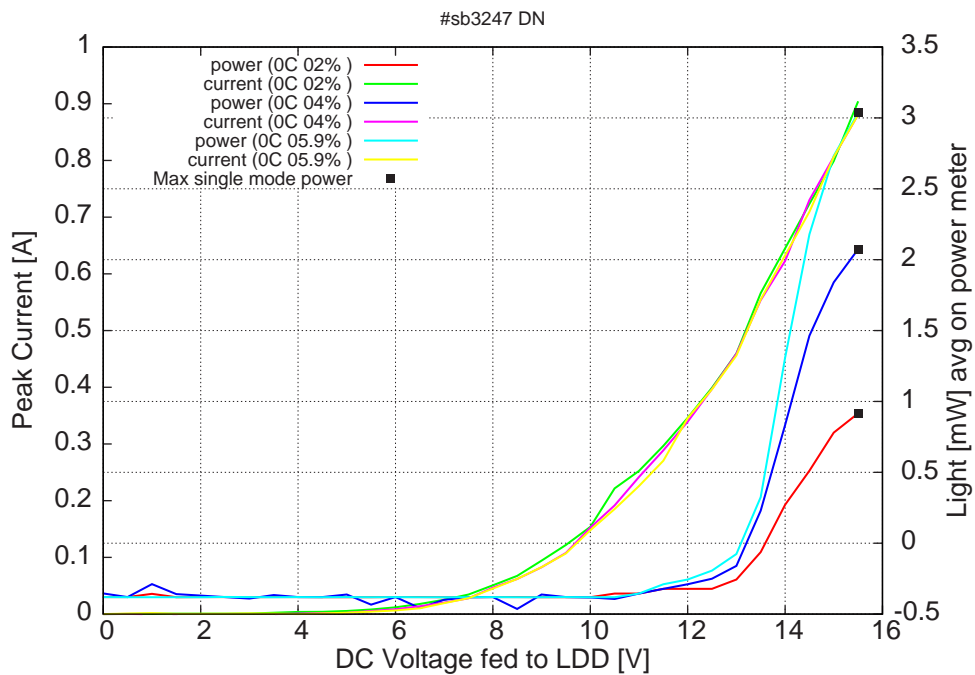


Figure 19: peak current and average power vs LDD voltage for various duty-cycle at OC (100ns pulses on the laser) (including the multimode region)

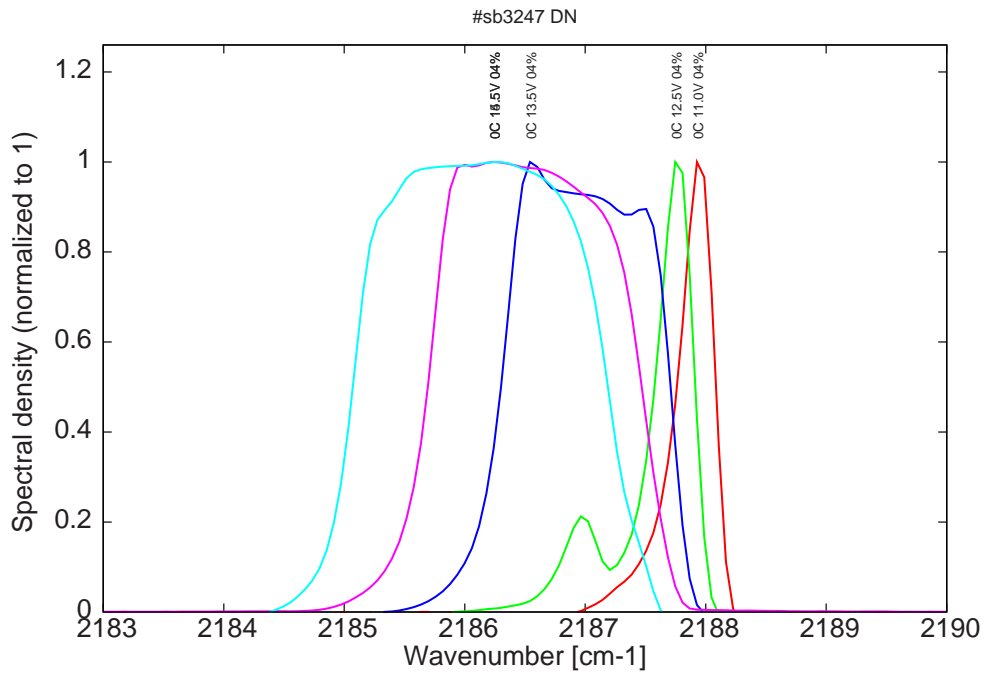


Figure 20: spectra at 0C at 4% duty-cycle (100ns pulses) for various LDD voltages (all monomode)

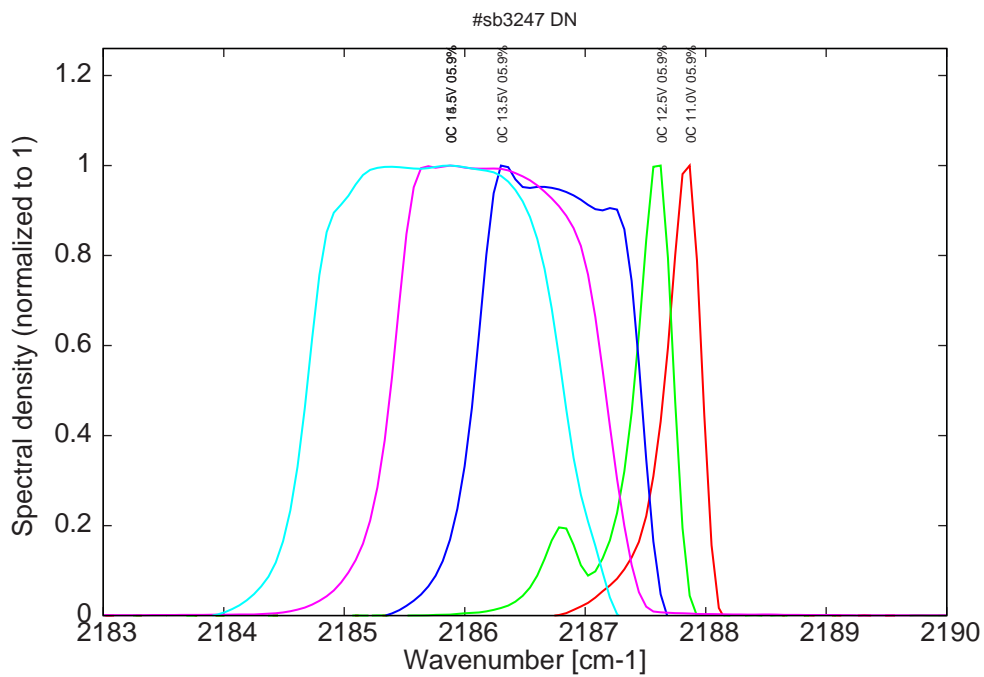


Figure 21: spectra at 0C at 6% duty-cycle (100ns pulses) for various LDD voltages (all monomode)