

**Datasheet for #sb2002 UP**

Recommendations:

Please read the User Manual and have a look at the FAQ at <http://www.alpeslasers.ch/?a=142>

**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).

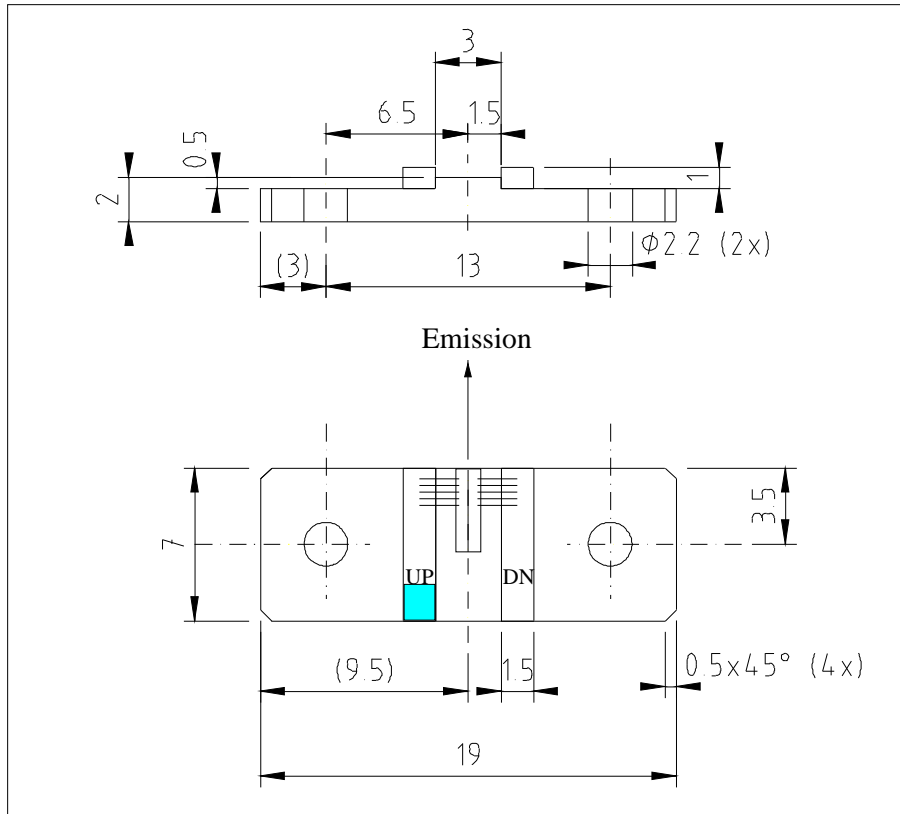


Figure 1: Mechanical and electrical interface for #sb2002 UP (please note that the laser is connected to the UP pad drawn in blue)

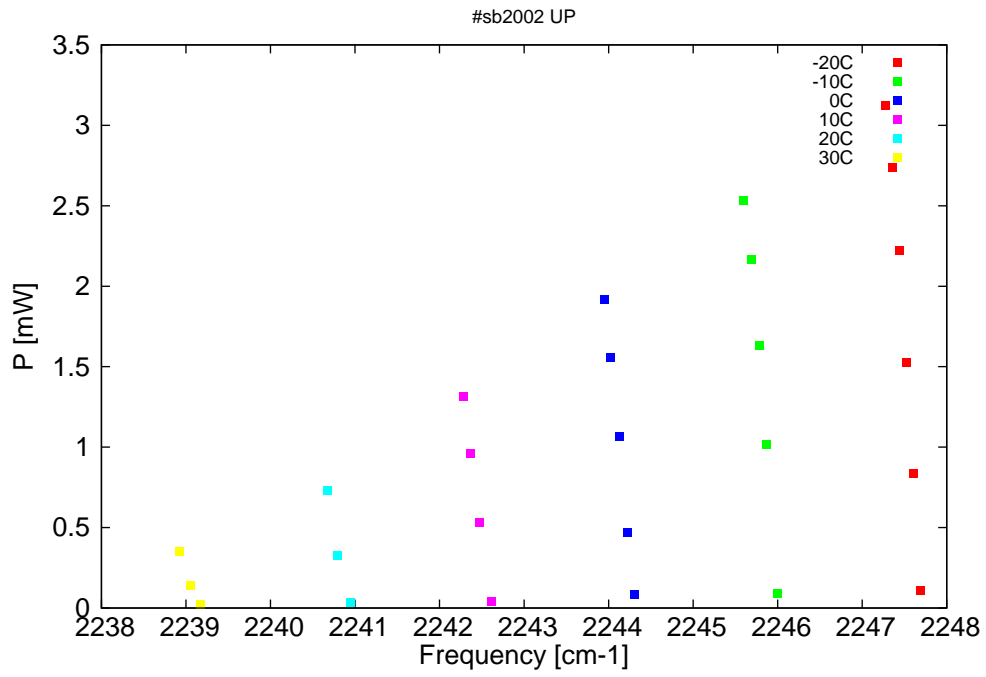


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

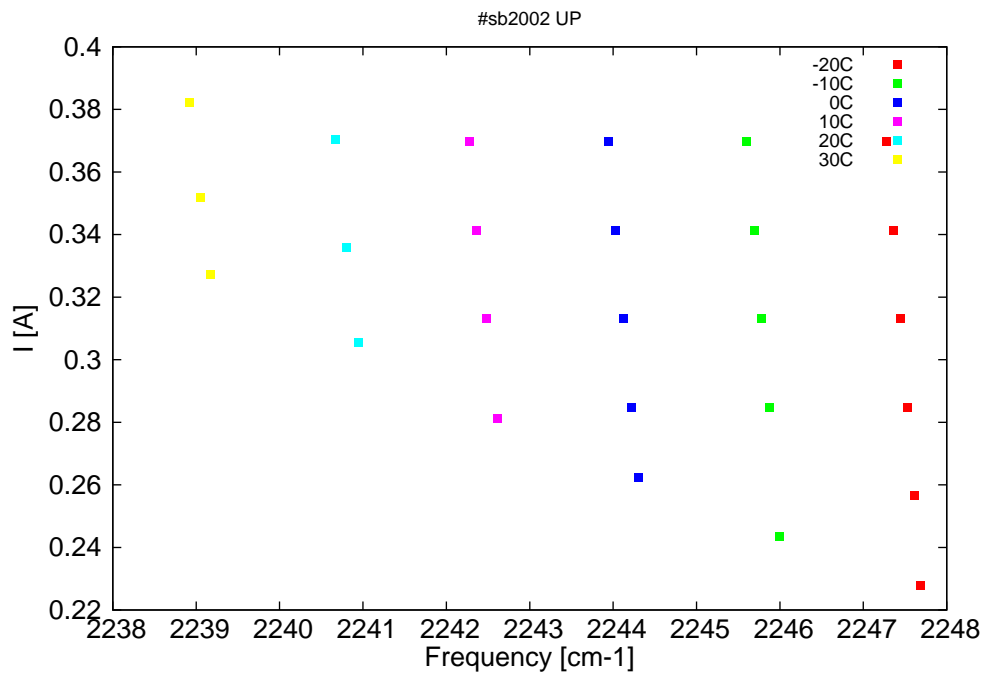


Figure 3: Peak current as a function of singlemode emission frequencies and temperatures

$\lambda$ [nm]	$\nu$ [cm <sup>-1</sup> ]	P[mW]	Temp[°C]	$U_{pulse}$ [V]	$I_{pulse}$ [A]
4449	2247.7	0.1	-20	9.57	0.228
4449.2	2247.6	0.8	-20	9.83	0.257
4449.3	2247.5	1.5	-20	10.05	0.285
4449.5	2247.4	2.2	-20	10.32	0.313
4449.7	2247.4	2.7	-20	10.55	0.341
4449.8	2247.3	3.1	-20	10.81	0.37
4452.4	2246	0.1	-10	9.65	0.243
4452.6	2245.9	1	-10	10.01	0.285
4452.8	2245.8	1.6	-10	10.26	0.313
4453	2245.7	2.2	-10	10.52	0.341
4453.2	2245.6	2.5	-10	10.77	0.37
4455.7	2244.3	0.1	0	9.78	0.262
4455.9	2244.2	0.5	0	9.97	0.285
4456.1	2244.1	1.1	0	10.23	0.313
4456.3	2244	1.6	0	10.49	0.341
4456.4	2243.9	1.9	0	10.73	0.37
4459.1	2242.6	0	10	9.9	0.281
4459.4	2242.5	0.5	10	10.19	0.313
4459.6	2242.4	1	10	10.45	0.341
4459.7	2242.3	1.3	10	10.7	0.37
4462.4	2240.9	0	20	10.08	0.305
4462.7	2240.8	0.3	20	10.37	0.336
4462.9	2240.7	0.7	20	10.68	0.37
4465.9	2239.2	0	30	10.24	0.327
4466.2	2239	0.1	30	10.47	0.352
4466.4	2238.9	0.4	30	10.76	0.382

Table 1: Singlemode optical output power as function of operating parameters.

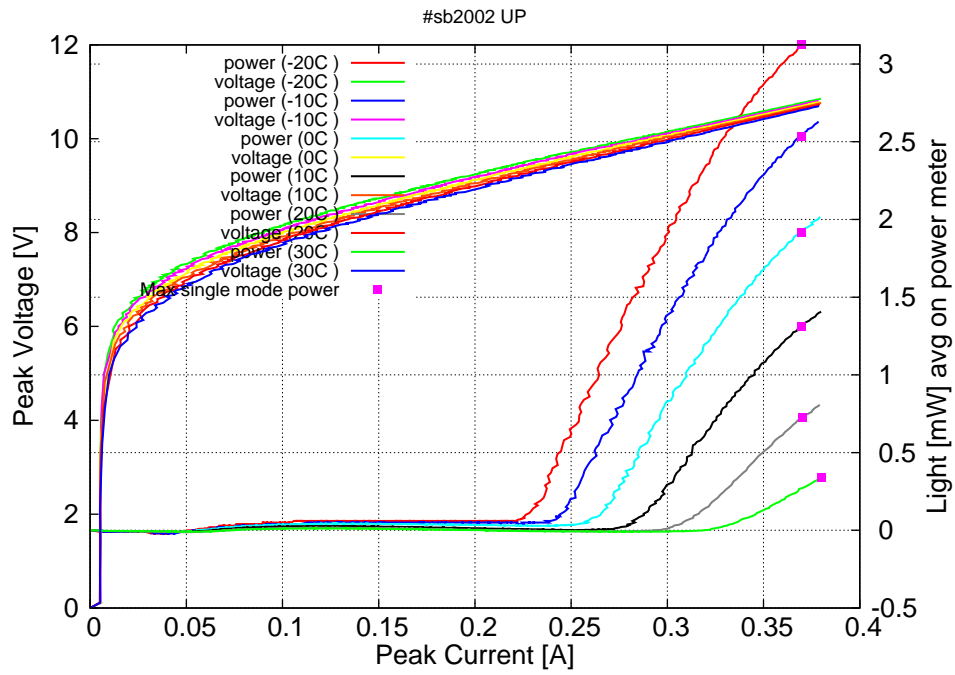


Figure 4: Peak voltage and average power vs peak current at 5% duty-cycle (500ns pulses on the laser) /  $I_{max} = 0.37A$  between -20C and 20C,  $I_{max} = 0.38A$  at 30C (the solid squares indicate the maximum singlemode emitted power)

Figure 3: spectra at different temperatures for various peak currents (40ns pulses on the laser)

