Quantum Cascade Solutions
Avenue des Pâquiers 1
CH-2072 St-Blaise
T: +41 32 729 95 10
F: +41 32 729 95 19

Datasheet for #sbcw19745 DN

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 higher current or voltage than specified in this document may cause damage and will result in loss of warranty, unless Alpes Lasers has permitted to do so!

WARNING: Beware of the polarity of the laser. This laser has to be powered with negative bias and positive bias on the specific zones drawn below. To be used with a high compliance CW laser driver capable of reaching the operating current and voltage indicated in this datasheet, or up to 2.5A/20V.

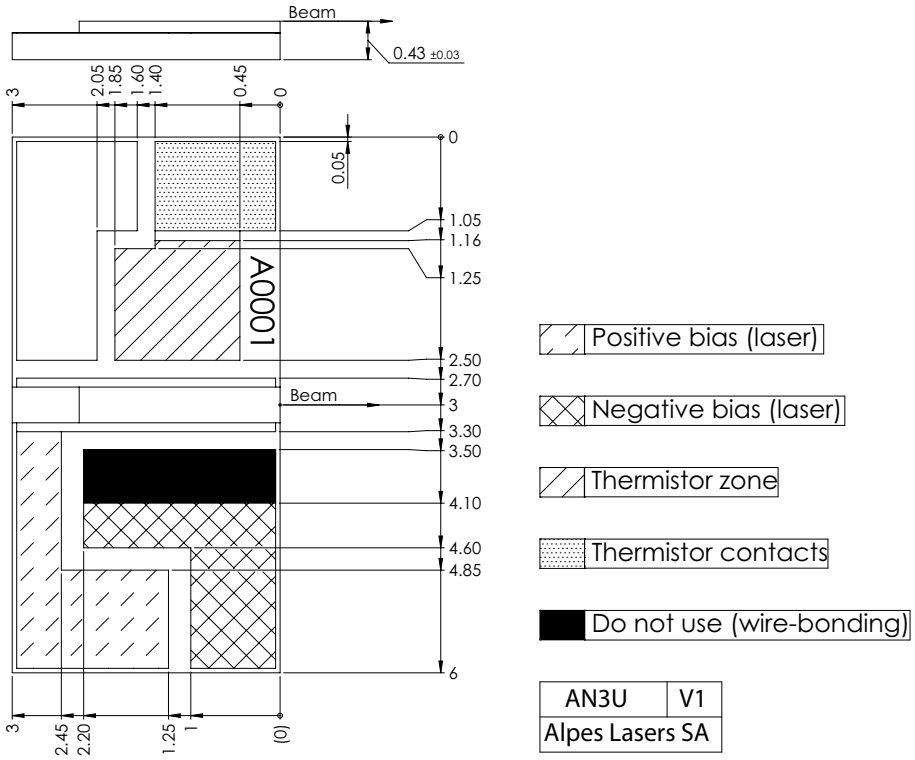

Figure 1: Mechanical and electrical interface for #sbcw19745 DN (please note that AlN submount numbering is A0RM0)

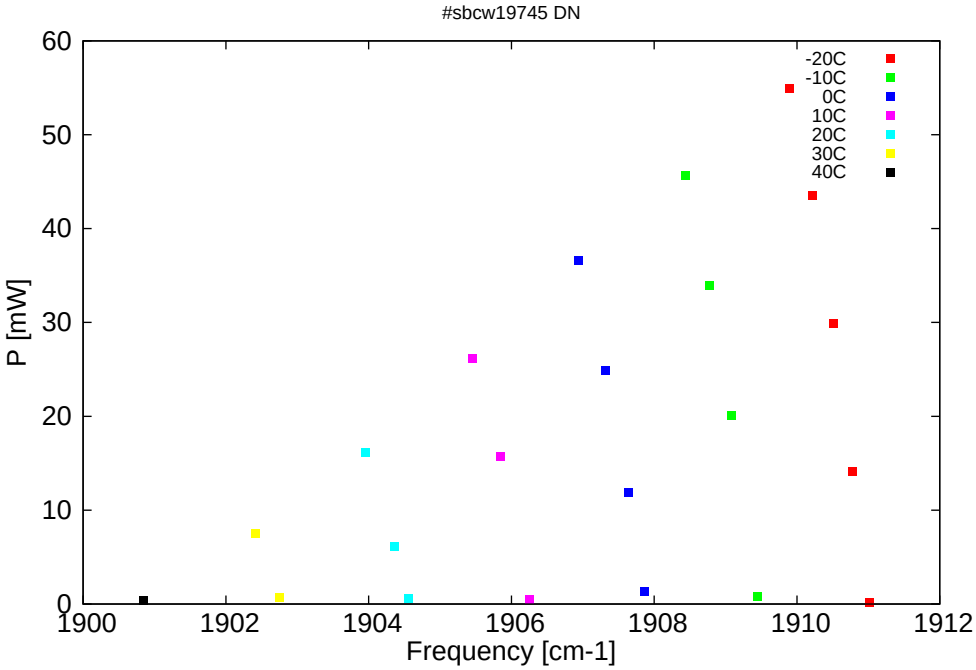

Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

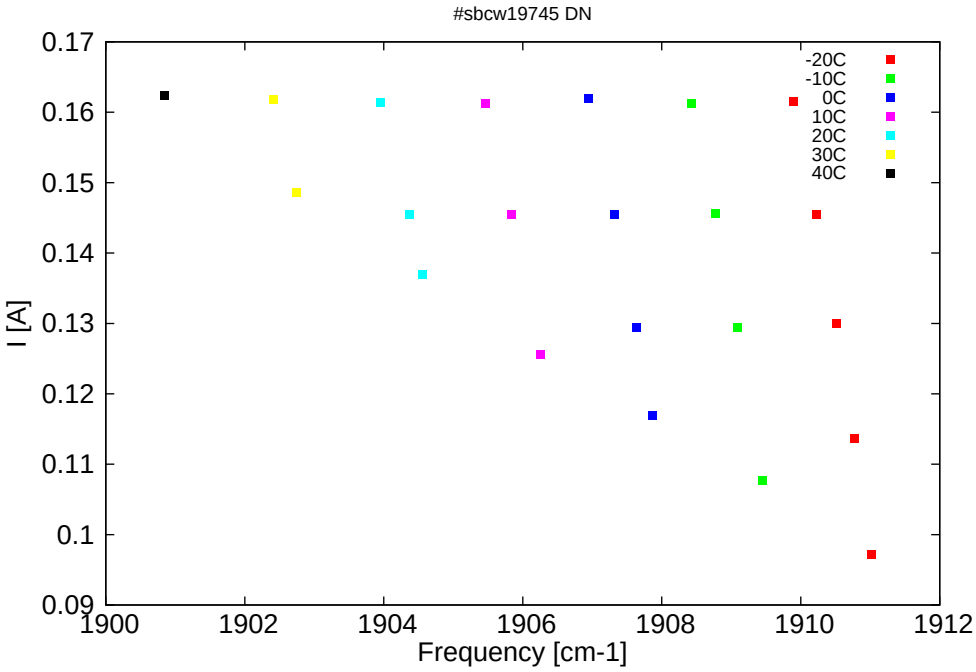

Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U$_{LASER}$[V]	I[A]
5232.8	1911	0.2	-20	7.8	0.097
5233.5	1910.8	14.1	-20	8.01	0.114
5234.2	1910.5	29.8	-20	8.23	0.13
5235	1910.2	43.5	-20	8.45	0.146
5235.9	1909.9	54.9	-20	8.71	0.161
5237.1	1909.4	0.8	-10	7.91	0.108
5238.1	1909.1	20.1	-10	8.2	0.129
5239	1908.8	34	-10	8.44	0.146
5239.9	1908.4	45.7	-10	8.7	0.161
5241.5	1907.9	1.4	0	8	0.117
5242.1	1907.6	11.9	0	8.18	0.129
5243	1907.3	24.9	0	8.42	0.145
5244	1906.9	36.6	0	8.69	0.162
5245.9	1906.3	0.5	10	8.11	0.126
5247	1905.8	15.7	10	8.41	0.146
5248.1	1905.5	26.2	10	8.67	0.161
5250.6	1904.6	0.6	20	8.26	0.137
5251.1	1904.4	6.1	20	8.39	0.145
5252.2	1904	16.2	20	8.66	0.161
5255.6	1902.7	0.7	30	8.43	0.149
5256.5	1902.4	7.5	30	8.65	0.162
5260.8	1900.8	0.3	40	8.66	0.162

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

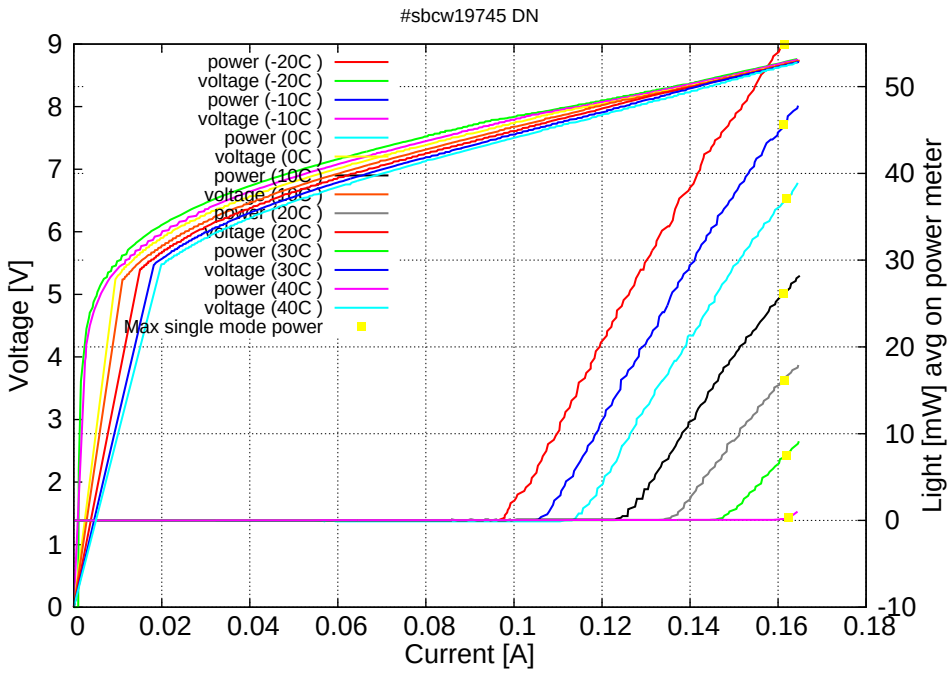

Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

Note: at -20C: Ith=0.10A / Vth=7.8V (2-wires measurements). Maximum operation current: 0.165A for all temperatures.

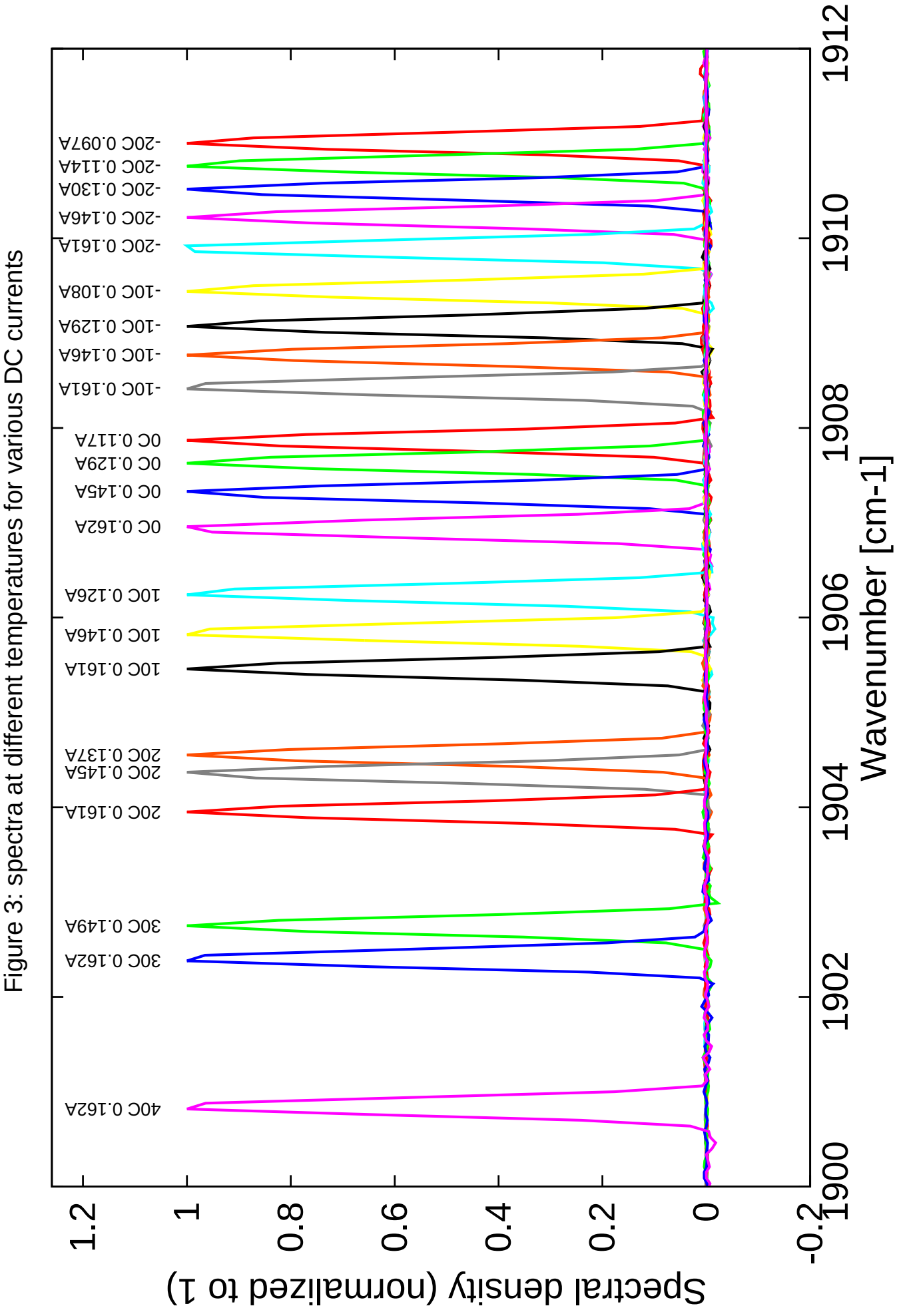

Figure 3: spectra at different temperatures for various DC currents