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 #sbcw27683 DN

Recommendations:

Please read the User Manual and have a look at the FAQ at
`https://www.alpeslasers.ch/resources/#faq`

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.

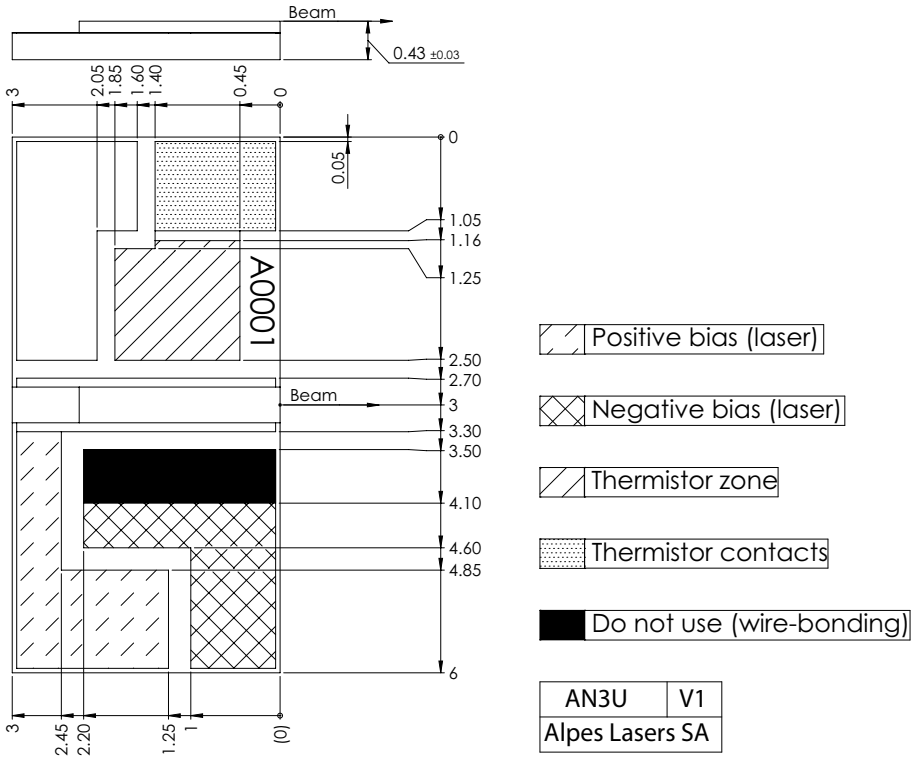

Figure 1: Mechanical and electrical interface for #sbcw27683 DN (please note that AlN submount numbering is A0Y47)

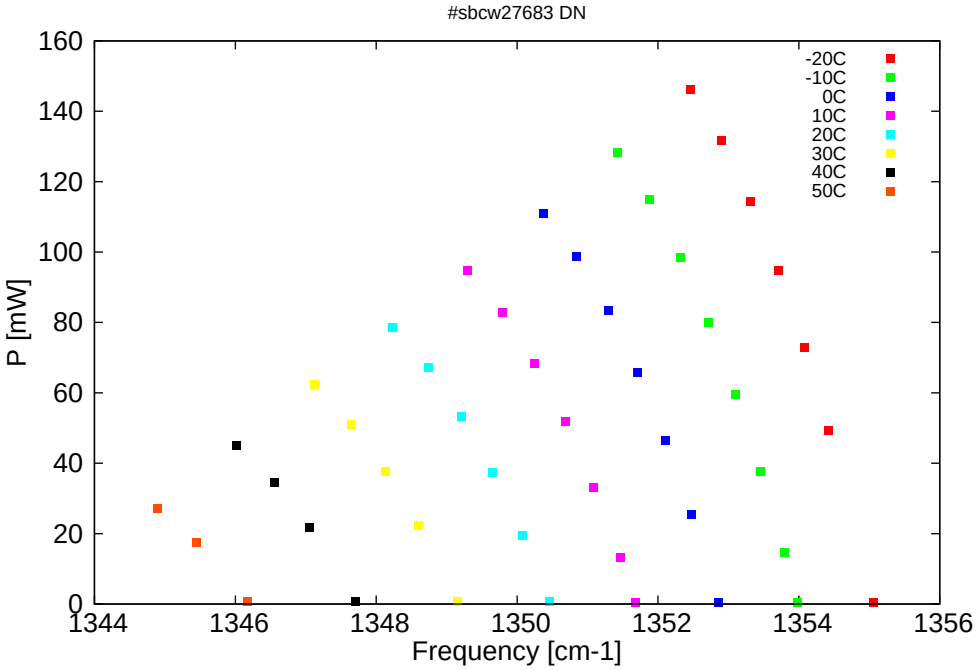

Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

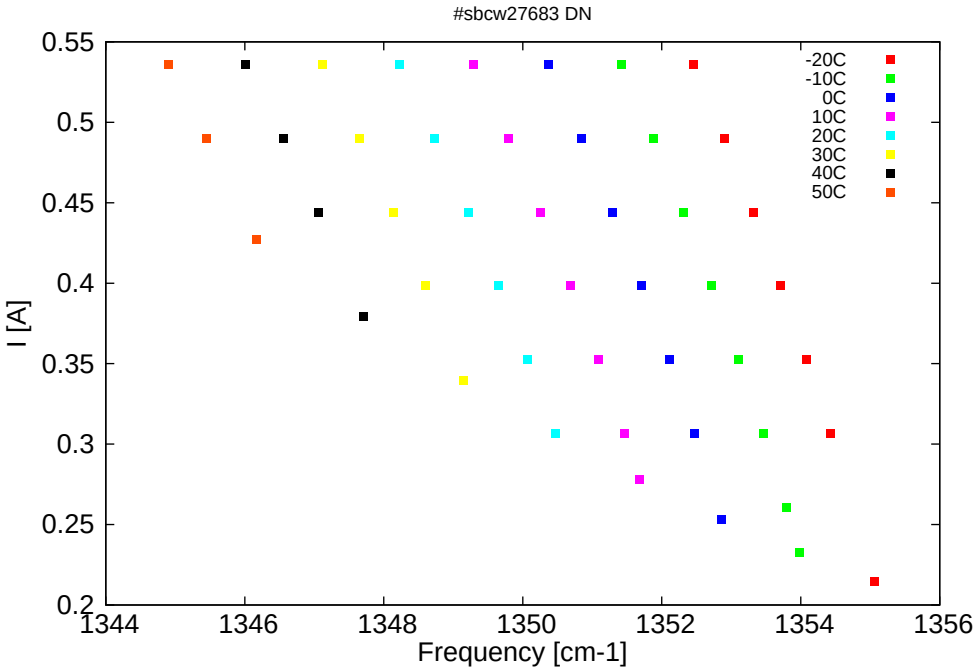

Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U$_{LASER}$[V]	I[A]
7379.8	1355.1	0.5	-20	8.09	0.215
7383.2	1354.4	49.4	-20	8.55	0.306
7385.1	1354.1	72.9	-20	8.76	0.352
7387.1	1353.7	94.7	-20	8.96	0.398
7389.2	1353.3	114.5	-20	9.17	0.444
7391.5	1352.9	131.6	-20	9.37	0.49
7393.9	1352.5	146.1	-20	9.57	0.536
7385.6	1354	0.5	-10	8.09	0.233
7386.6	1353.8	14.5	-10	8.23	0.261
7388.5	1353.5	37.6	-10	8.46	0.306
7390.4	1353.1	59.6	-10	8.68	0.352
7392.5	1352.7	79.9	-10	8.88	0.398
7394.7	1352.3	98.4	-10	9.09	0.444
7397.1	1351.9	115	-10	9.29	0.49
7399.6	1351.4	128.3	-10	9.5	0.536
7391.8	1352.9	0.5	0	8.11	0.253
7393.9	1352.5	25.5	0	8.38	0.306
7395.9	1352.1	46.4	0	8.59	0.352
7398	1351.7	65.8	0	8.81	0.398
7400.3	1351.3	83.4	0	9.02	0.444
7402.8	1350.8	98.7	0	9.22	0.49
7405.4	1350.4	111	0	9.43	0.536
7398.2	1351.7	0.5	10	8.16	0.278
7399.4	1351.5	13.1	10	8.3	0.306
7401.4	1351.1	33.2	10	8.52	0.352
7403.7	1350.7	51.8	10	8.74	0.398
7406	1350.3	68.4	10	8.95	0.444
7408.6	1349.8	83	10	9.16	0.49
7411.3	1349.3	94.8	10	9.37	0.536
7404.9	1350.5	0.7	20	8.23	0.307
7407	1350.1	19.5	20	8.45	0.352
7409.3	1349.7	37.2	20	8.67	0.398
7411.7	1349.2	53.4	20	8.89	0.444
7414.3	1348.7	67.1	20	9.1	0.49
7417.1	1348.2	78.6	20	9.32	0.536
7412.1	1349.2	0.7	30	8.32	0.34
7415.1	1348.6	22.2	30	8.6	0.398
7417.6	1348.1	37.6	30	8.82	0.444
7420.3	1347.7	51.1	30	9.04	0.49
7423.2	1347.1	62.4	30	9.26	0.536
7420	1347.7	0.6	40	8.44	0.379
7423.6	1347.1	21.7	40	8.76	0.444
7426.4	1346.6	34.5	40	8.98	0.49
7429.3	1346	45	40	9.2	0.536
7428.5	1346.2	0.7	50	8.61	0.427
7432.5	1345.4	17.4	50	8.92	0.49
7435.5	1344.9	27	50	9.14	0.536

continued on next page

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U$_{LASER}$[V]	I[A]

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

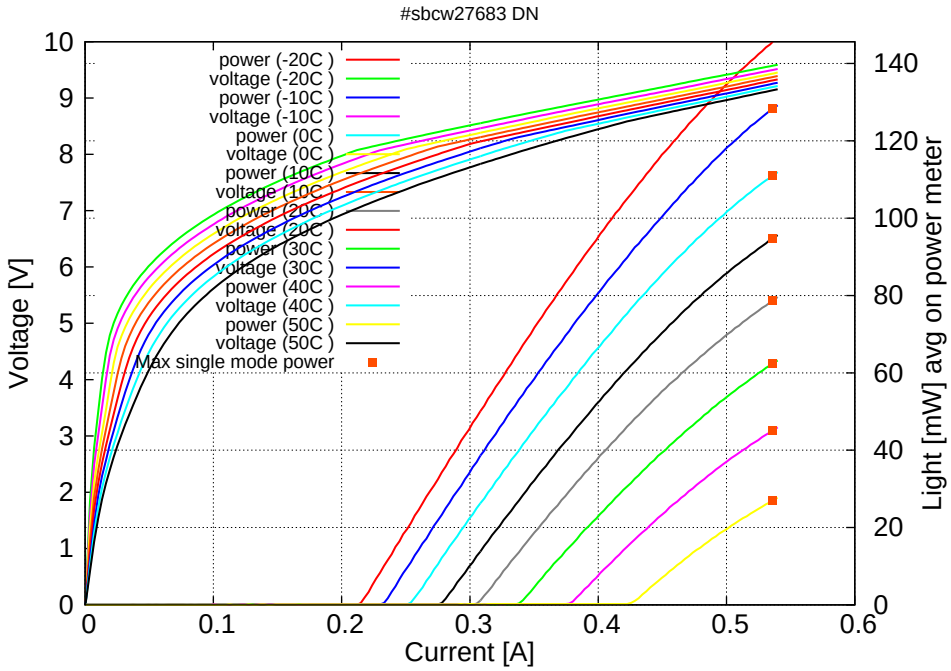

Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

Note: at -20C: Ith=0.21A / Vth=8.1V (2-wires measurements). Maximum operation current: 0.54A for all temperatures.

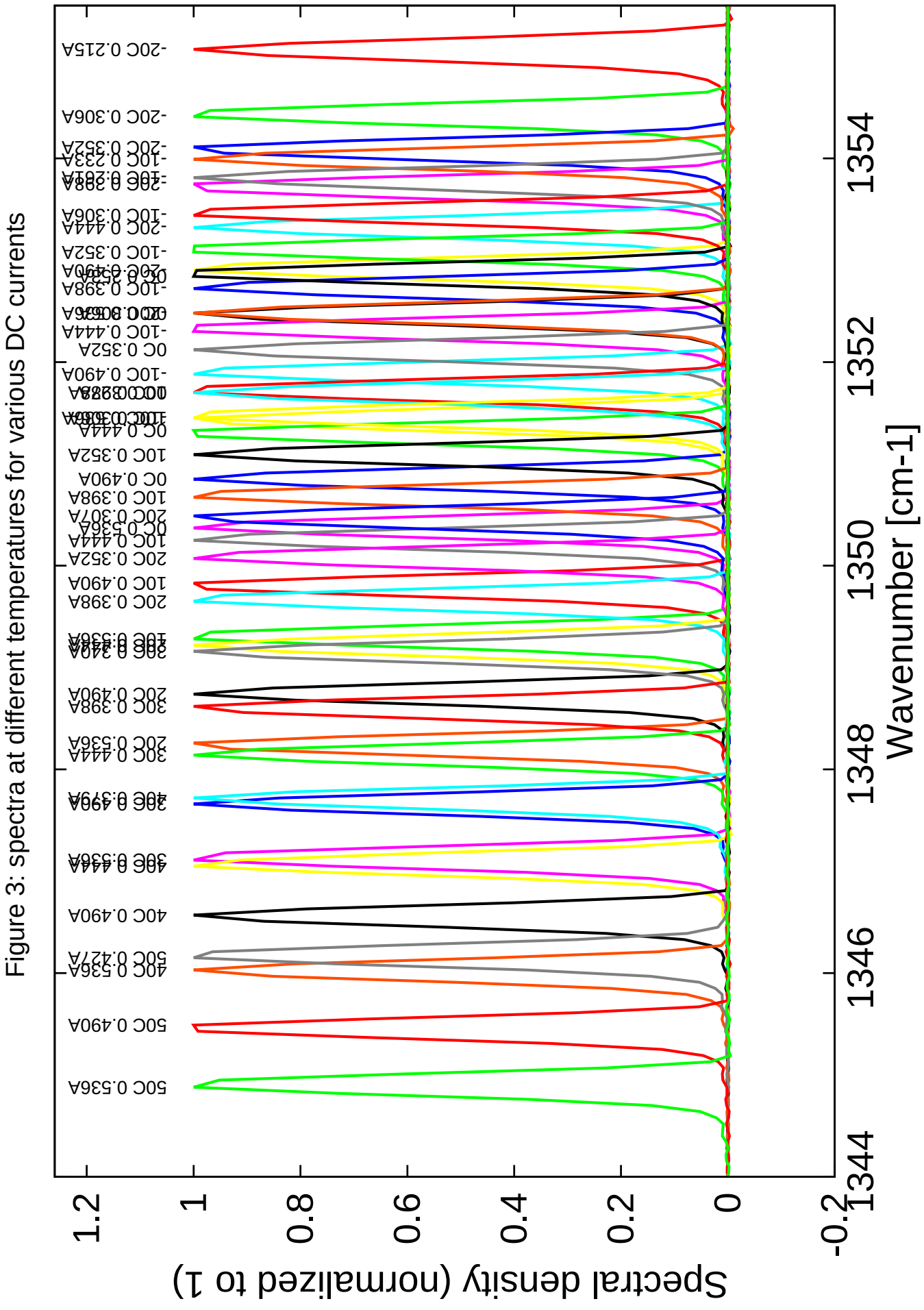

Figure 3: spectra at different temperatures for various DC currents