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 #sbcw23278 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 current on the laser contact (= bonding pad, corresponding to the label "laser" on the LLH) and the positive current on the base contact (= submount, corresponding to the label "base" on the LLH). 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.

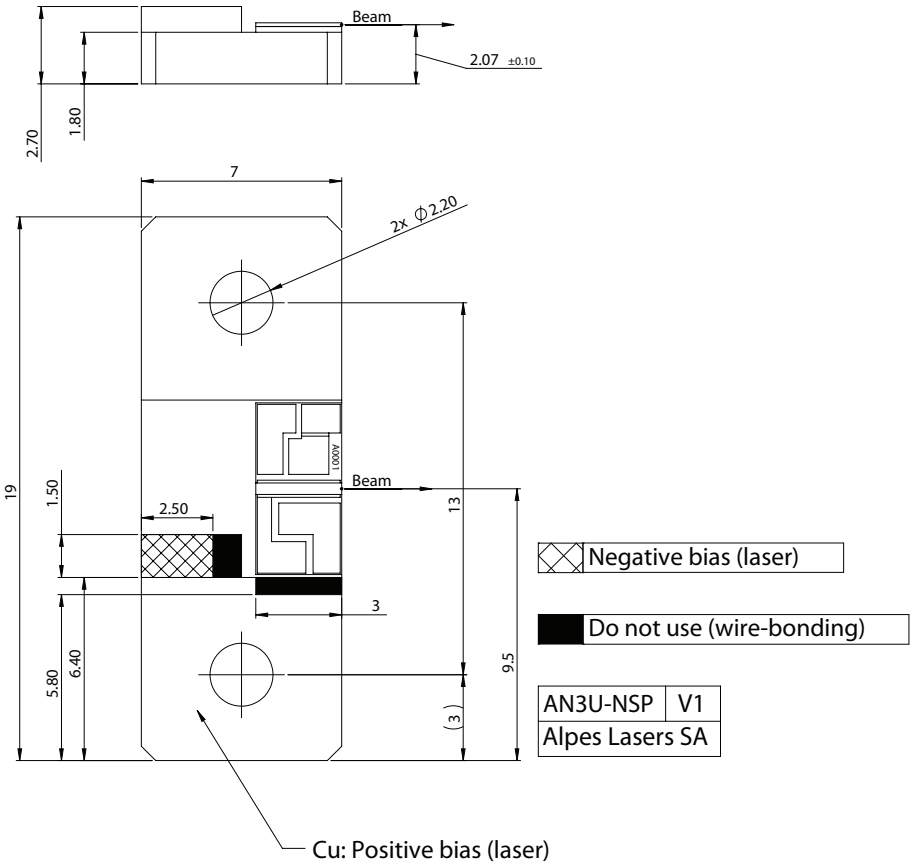

Figure 1: Mechanical and electrical interface for #sbcw23278 DN

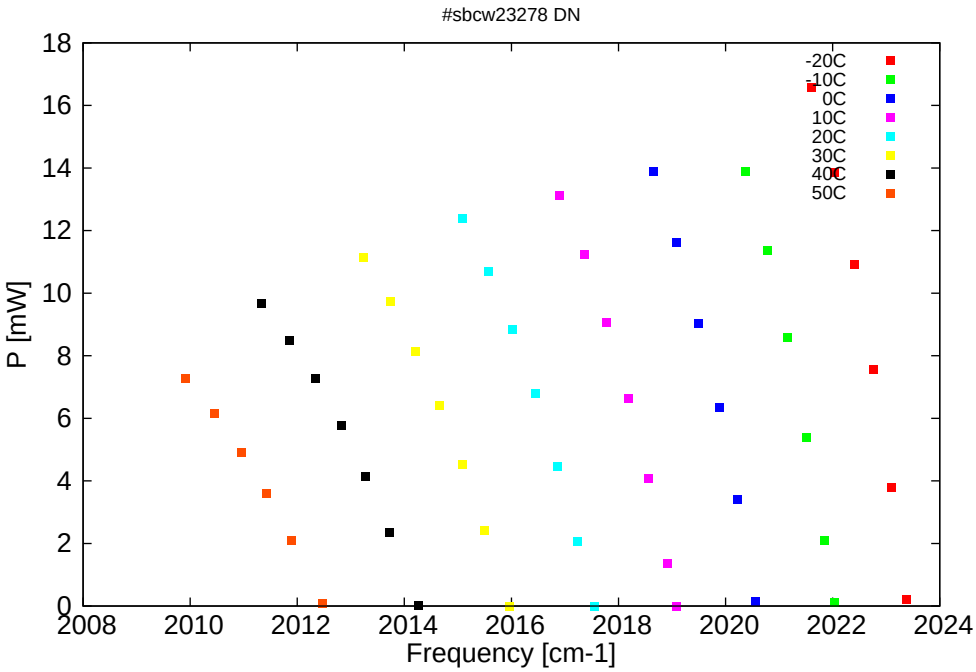

Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

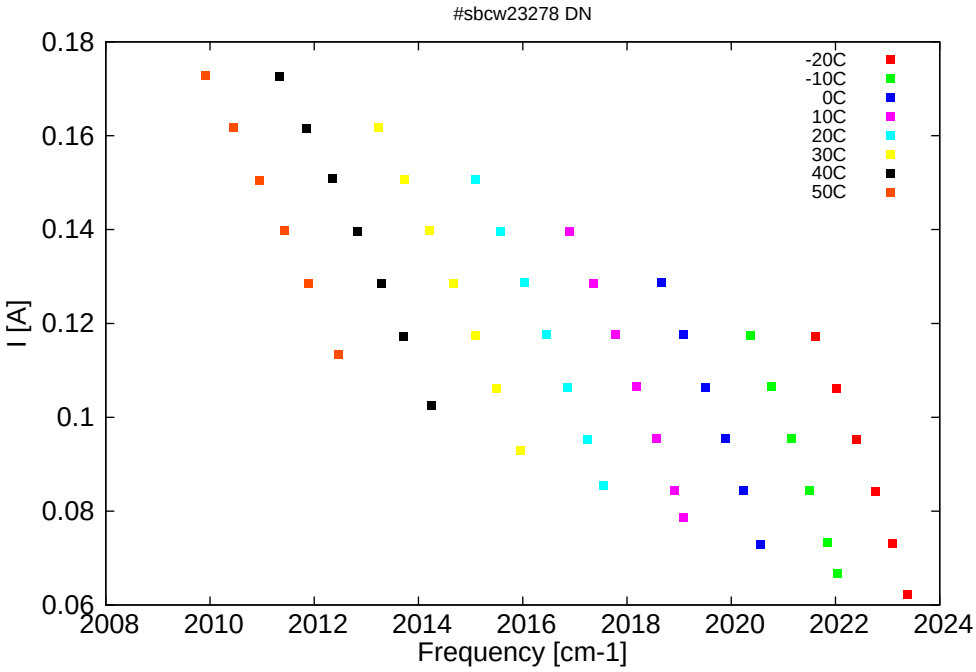

Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U$_{LASER}$[V]	I[A]
4942.2	2023.4	0.2	-20	12.29	0.062
4942.9	2023.1	3.8	-20	12.64	0.073
4943.7	2022.8	7.6	-20	13.01	0.084
4944.6	2022.4	10.9	-20	13.37	0.095
4945.5	2022	13.9	-20	13.75	0.106
4946.5	2021.6	16.6	-20	14.16	0.117
4945.5	2022	0.1	-10	12.28	0.067
4946	2021.8	2.1	-10	12.48	0.073
4946.8	2021.5	5.4	-10	12.82	0.084
4947.7	2021.2	8.6	-10	13.17	0.096
4948.6	2020.8	11.4	-10	13.53	0.107
4949.6	2020.4	13.9	-10	13.9	0.118
4949.1	2020.6	0.2	0	12.32	0.073
4949.9	2020.2	3.4	0	12.65	0.084
4950.8	2019.9	6.4	0	12.98	0.095
4951.7	2019.5	9	0	13.31	0.106
4952.7	2019.1	11.6	0	13.67	0.118
4953.8	2018.7	13.9	0	14.03	0.129
4952.7	2019.1	0	10	12.35	0.079
4953.1	2018.9	1.3	10	12.5	0.084
4954	2018.6	4.1	10	12.82	0.095
4954.9	2018.2	6.6	10	13.13	0.106
4955.9	2017.8	9.1	10	13.46	0.118
4957	2017.4	11.2	10	13.79	0.129
4958.1	2016.9	13.1	10	14.14	0.14
4956.5	2017.6	0	20	12.42	0.085
4957.3	2017.2	2.1	20	12.67	0.095
4958.2	2016.9	4.5	20	12.97	0.106
4959.2	2016.4	6.8	20	13.28	0.118
4960.3	2016	8.8	20	13.6	0.129
4961.4	2015.6	10.7	20	13.91	0.14
4962.5	2015.1	12.4	20	14.25	0.151
4960.4	2016	0	30	12.5	0.093
4961.5	2015.5	2.4	30	12.83	0.106
4962.6	2015.1	4.5	30	13.13	0.117
4963.6	2014.7	6.4	30	13.42	0.129
4964.7	2014.2	8.1	30	13.72	0.14
4965.9	2013.7	9.7	30	14.03	0.151
4967.1	2013.2	11.1	30	14.35	0.162
4964.6	2014.3	0	40	12.63	0.103
4966	2013.7	2.4	40	12.99	0.117
4967	2013.3	4.1	40	13.27	0.128
4968.1	2012.8	5.8	40	13.56	0.14
4969.3	2012.3	7.3	40	13.85	0.151
4970.5	2011.9	8.5	40	14.14	0.162
4971.8	2011.3	9.7	40	14.44	0.173
4969	2012.5	0.1	50	12.79	0.113
4970.5	2011.9	2.1	50	13.13	0.129
4971.6	2011.4	3.6	50	13.41	0.14

continued on next page

λ[nm]	ν[cm^{-1}]	P[mW]	Temp[°C]	U$_{LASER}$[V]	I[A]
4972.8	2011	4.9	50	13.67	0.151
4974	2010.5	6.1	50	13.95	0.162
4975.3	2009.9	7.3	50	14.23	0.173

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

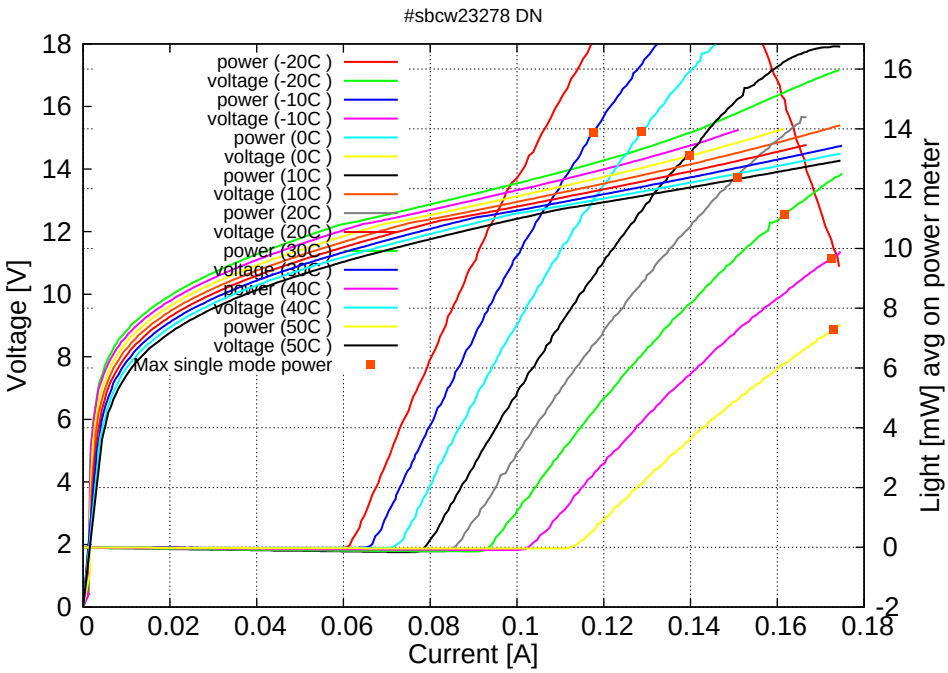

Figure 4: voltage and avg power vs current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

Note: at -20C: Ith=0.06A / Vth=12.3V (2-wires measurements). Maximum operation current: 0.12A between -20C and -10C, 0.13A at 0C, 0.14A at 10C, 0.15A at 20C, 0.165A at 30C, 0.175A between 40C and 50C.

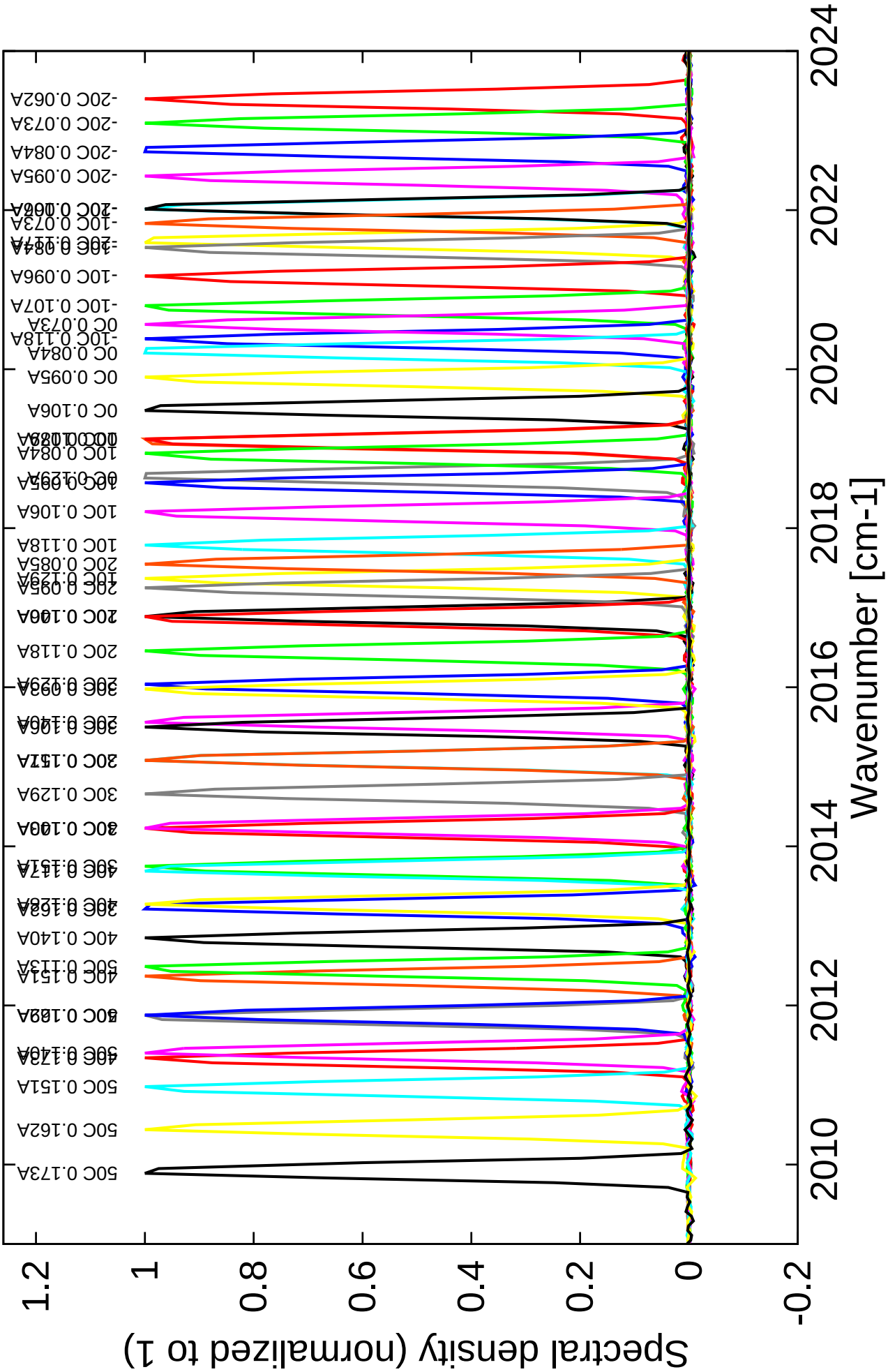

Figure 3: spectra at different temperatures for various DC currents