

Datasheet for #sbcw1312 DN

Recommendations:

Please read the starter kit user manual (at least installation chapter 5), if available, and have a look at the FAQ at <http://www.alpeslasers.ch/alfaqa.pdf>

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 use with a power-supply ILX Lightwave LDX-3232 or equivalent.

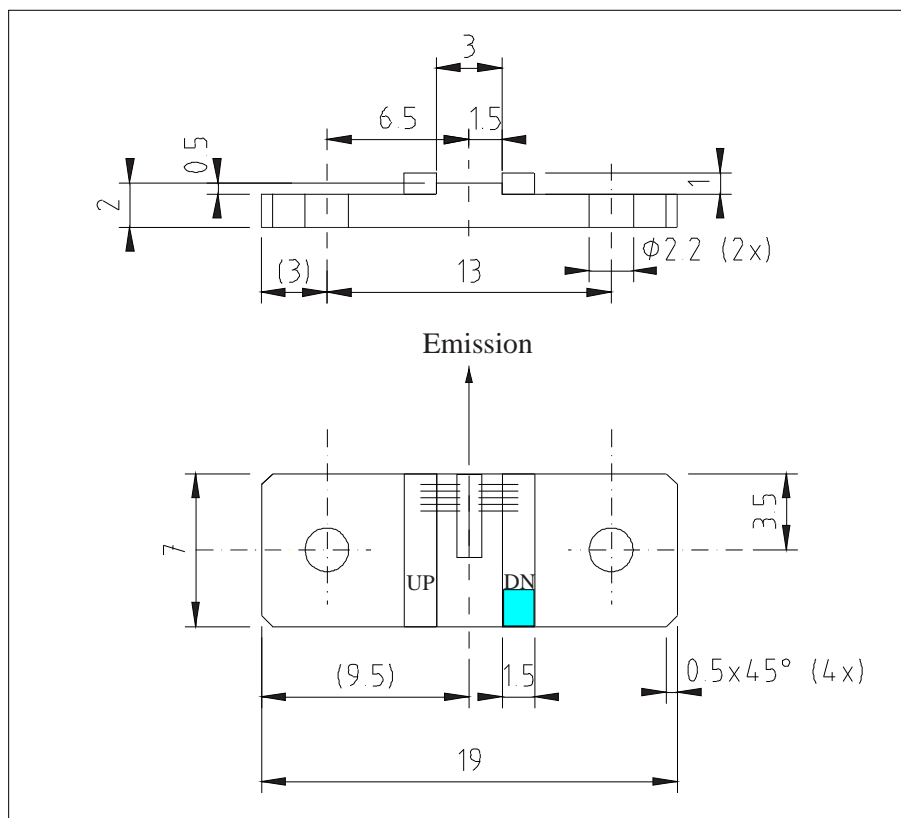


Figure 1: Support mounting for #sbcw1312 DN (please note that the laser is connected to the DN pad drawn in blue)

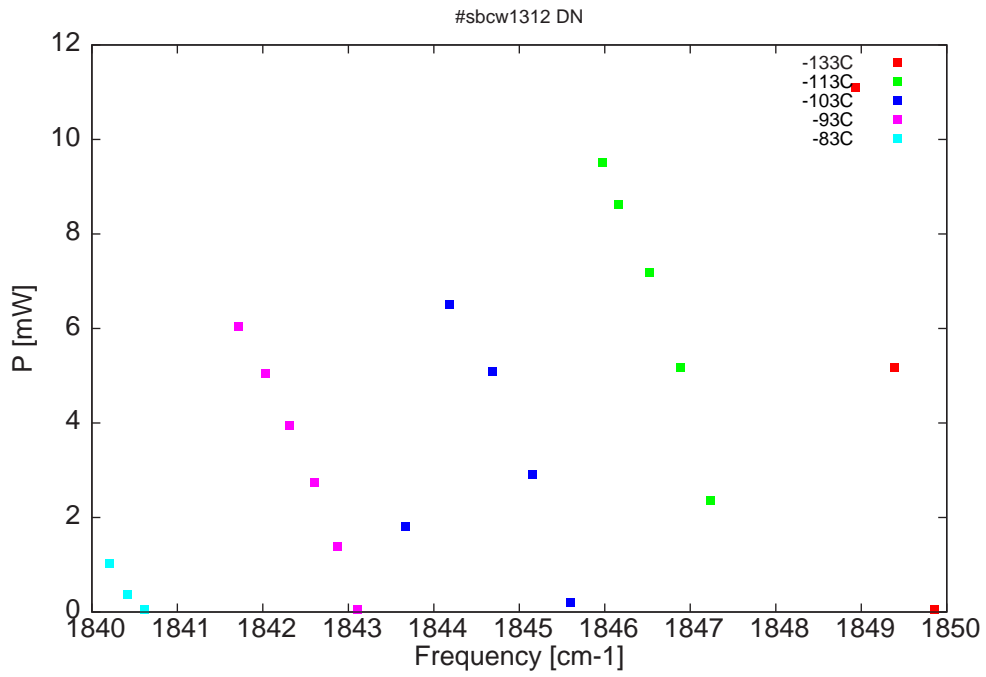


Figure 2: Output power as a function of the singlemode emission frequencies and temperatures

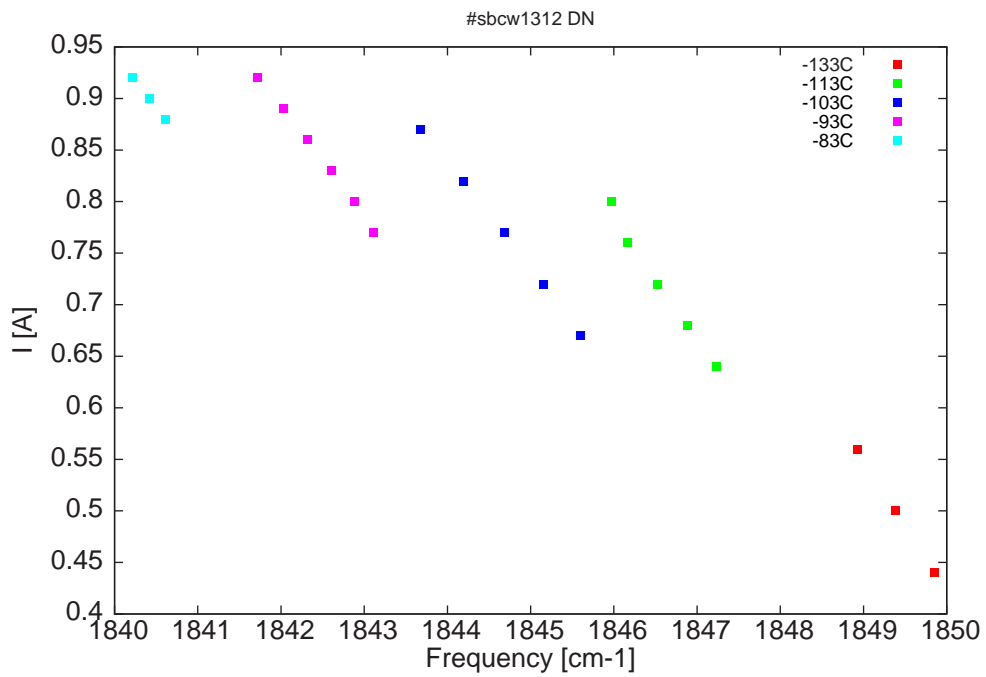


Figure 3: Applied DC current as a function of singlemode emission frequencies and temperatures

λ [nm]	ν [cm ⁻¹]	P[mW]	Temp[°C]	U_{LASER} [V]	I[A]
5405.8	1849.9	0.1	-133	7.3	0.44
5407.2	1849.4	5.2	-133	7.4	0.5
5408.5	1848.9	11.1	-133	7.4	0.56
5413.5	1847.2	2.4	-113	7.4	0.64
5414.5	1846.9	5.2	-113	7.5	0.68
5415.6	1846.5	7.2	-113	7.5	0.72
5416.6	1846.2	8.6	-113	7.6	0.76
5417.2	1846	9.5	-113	7.7	0.8
5418.3	1845.6	0.2	-103	7.4	0.67
5419.6	1845.2	2.9	-103	7.5	0.72
5421	1844.7	5.1	-103	7.6	0.77
5422.4	1844.2	6.5	-103	7.6	0.82
5424	1843.7	1.8	-103	7.7	0.87
5425.6	1843.1	0.1	-93	7.5	0.77
5426.3	1842.9	1.4	-93	7.6	0.8
5427.1	1842.6	2.7	-93	7.6	0.83
5428	1842.3	4	-93	7.7	0.86
5428.8	1842	5	-93	7.7	0.89
5429.7	1841.7	6	-93	7.7	0.92
5433	1840.6	0.1	-83	7.7	0.88
5433.6	1840.4	0.4	-83	7.7	0.9
5434.2	1840.2	1	-83	7.7	0.92

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

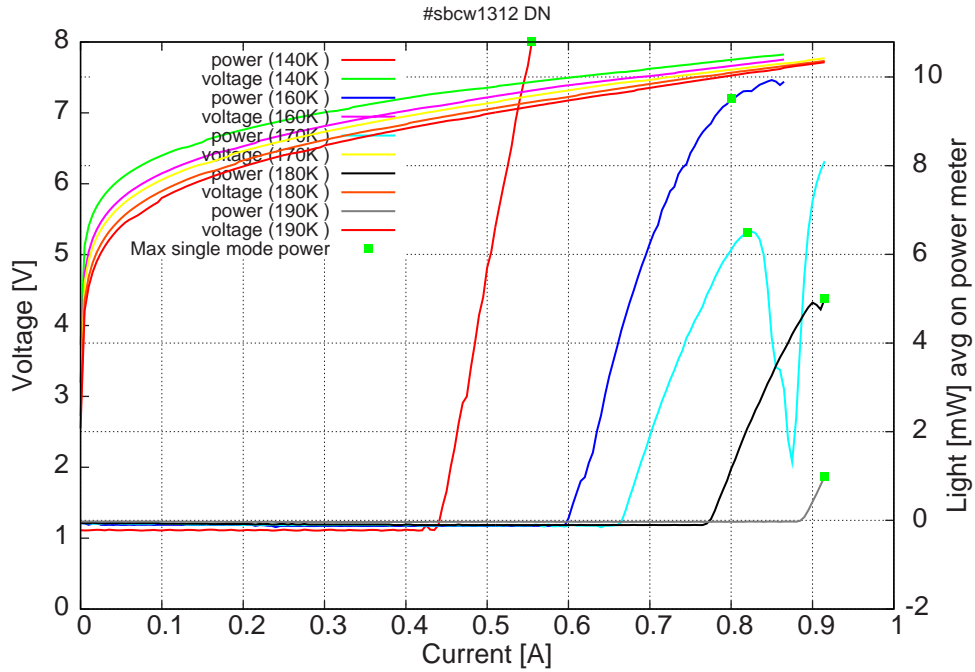


Figure 4: peak voltage and average power vs peak current in continuous-wave operation (the solid squares indicate the maximum singlemode emitted power)

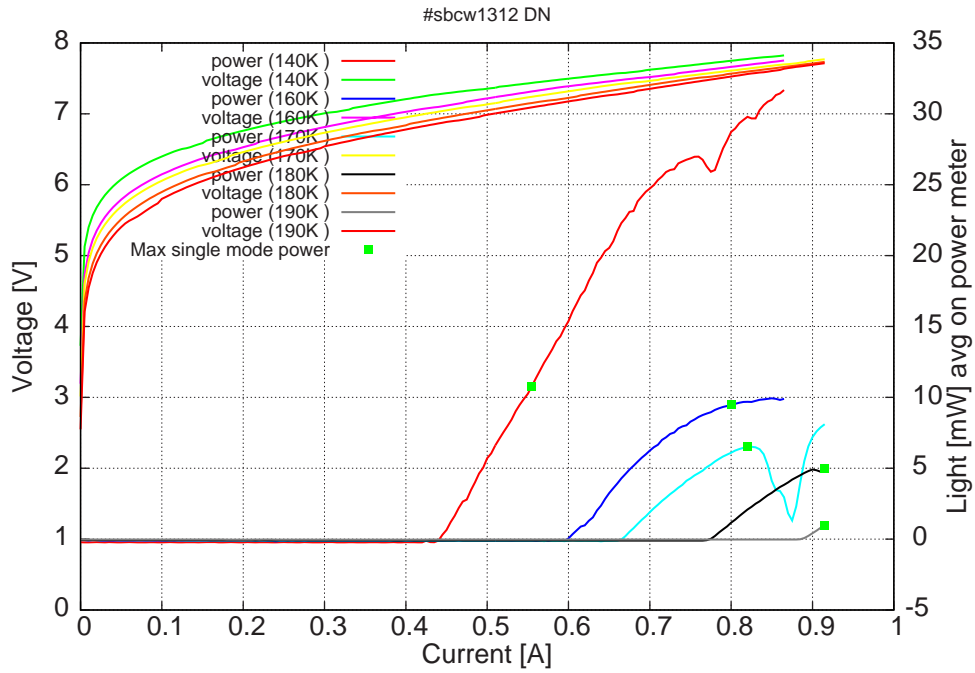


Figure 5: peak voltage and average power vs peak current in continuous-wave operation (including the multimode region)

Note: at 140K: $I_{th}=440\text{mA}$ / $V_{th}= 7.28\text{V}$ (4-wires measurements)

Maximum operation current: 0.7A for 140K, 0.8A for 160K, 0.87A for 170K, 0.92A between 180K and 190K.

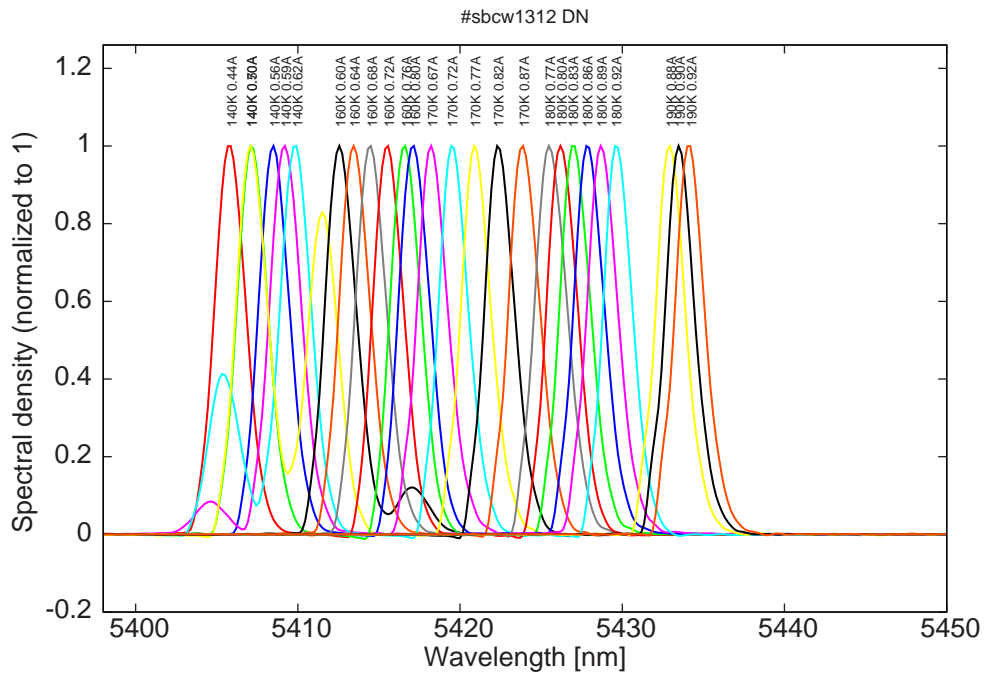


Figure 6: spectra at 140K, 160K, 170K, 180K and 190K

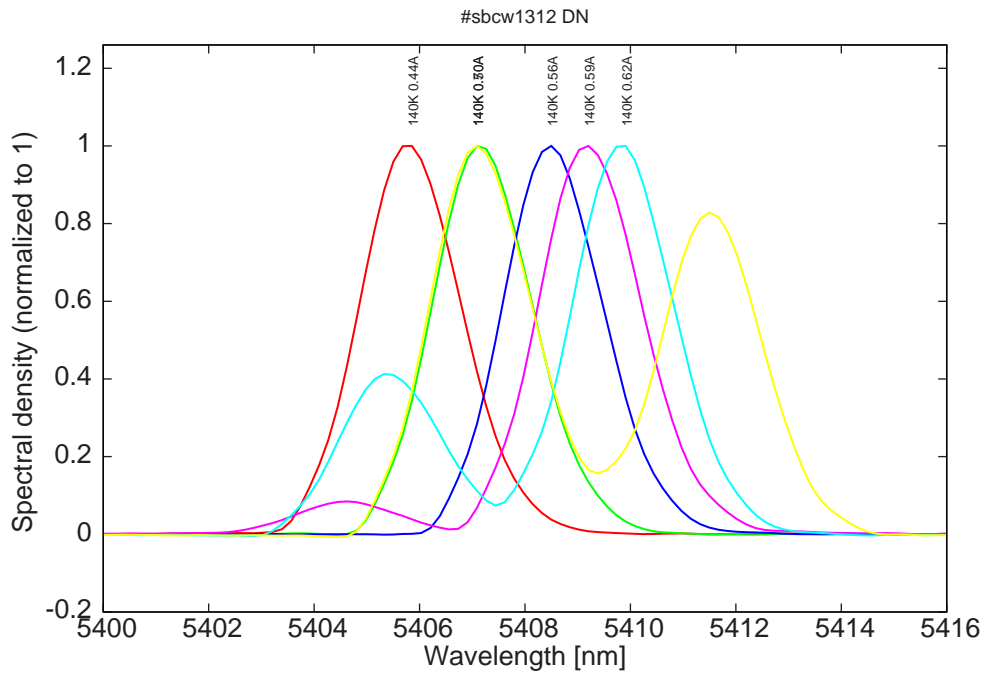


Figure 7: spectra at 140K (monomode up to 0.56A)

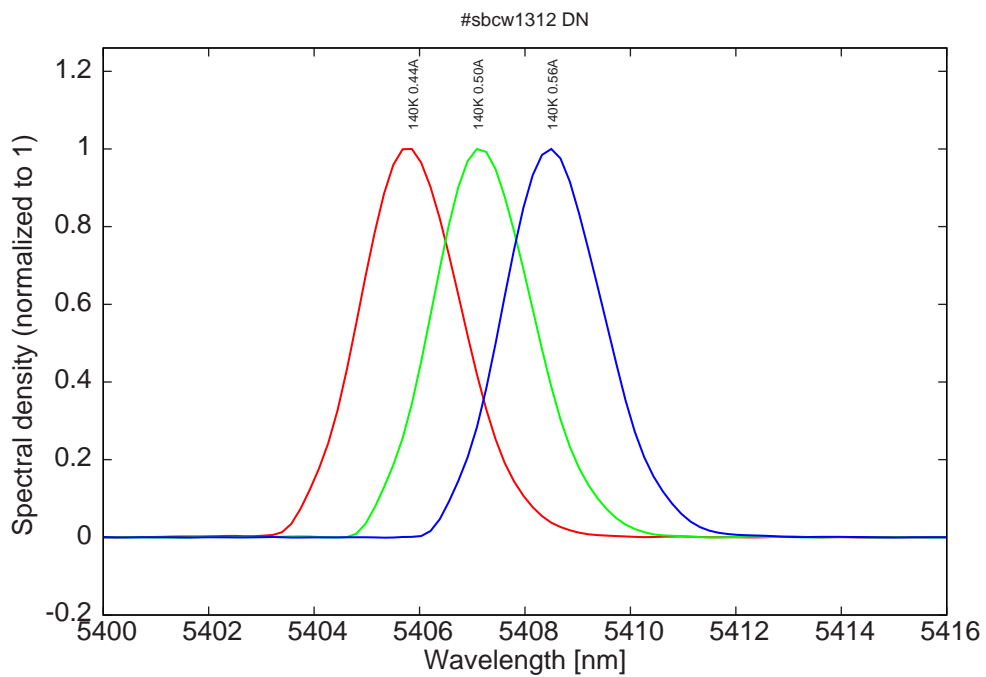


Figure 8: spectra at 140K (monomode range, but mode jumping compared to monomode spectra for higher temperatures)

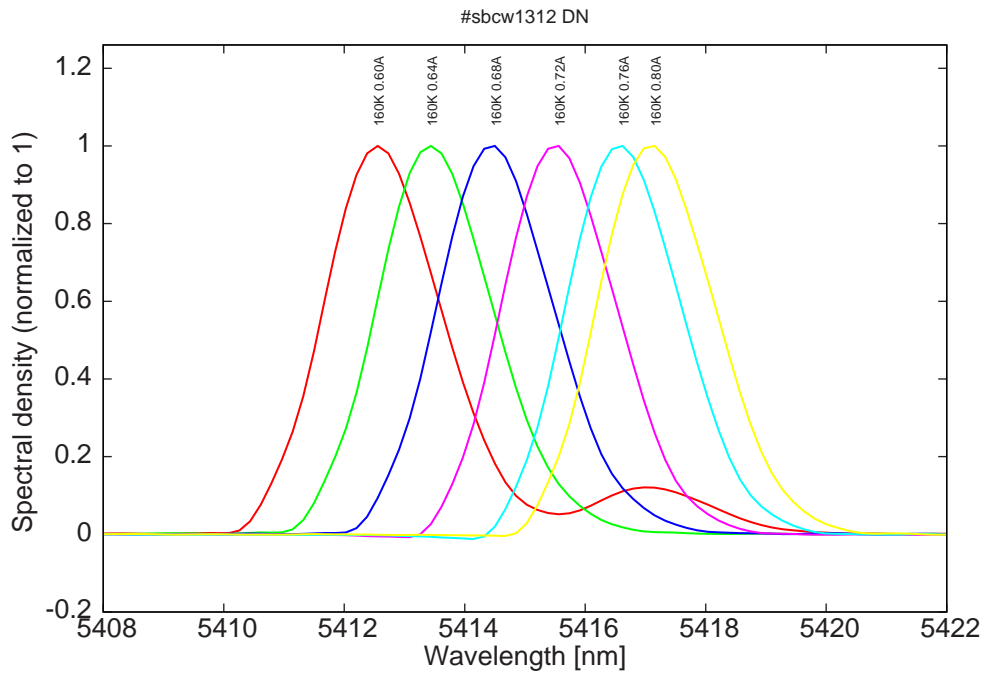


Figure 9: spectra at 160K (bimode at threshold and then monomode)

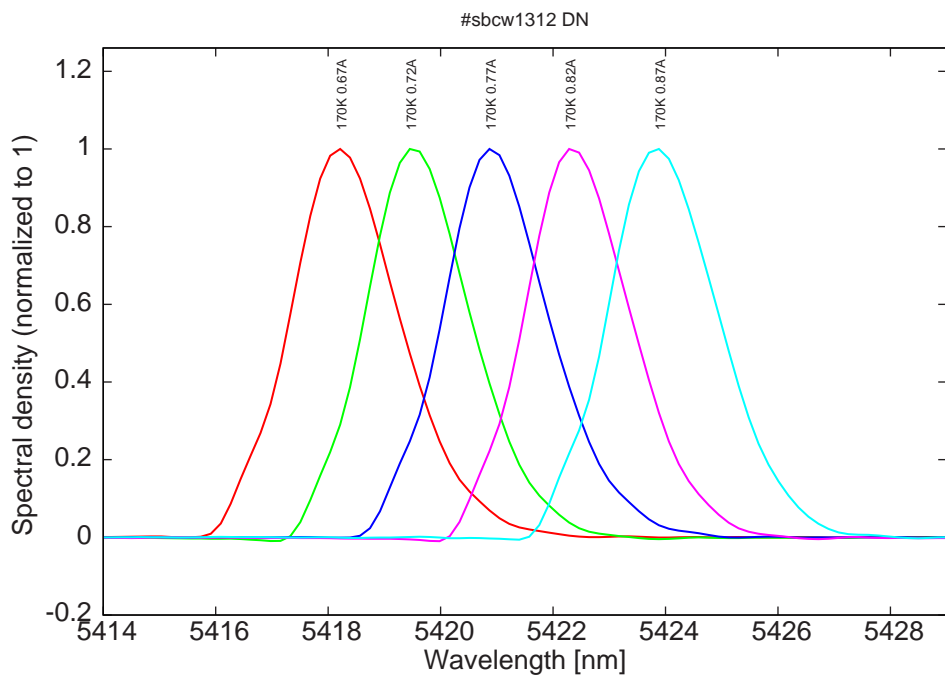


Figure 10: spectra at 170K

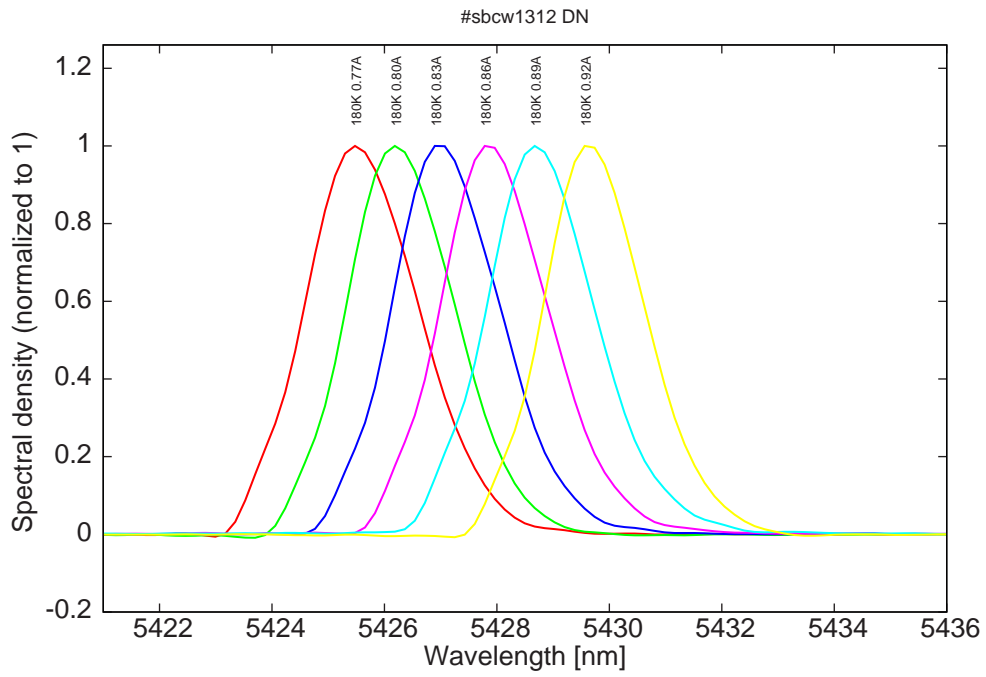


Figure 11: spectra at 180K

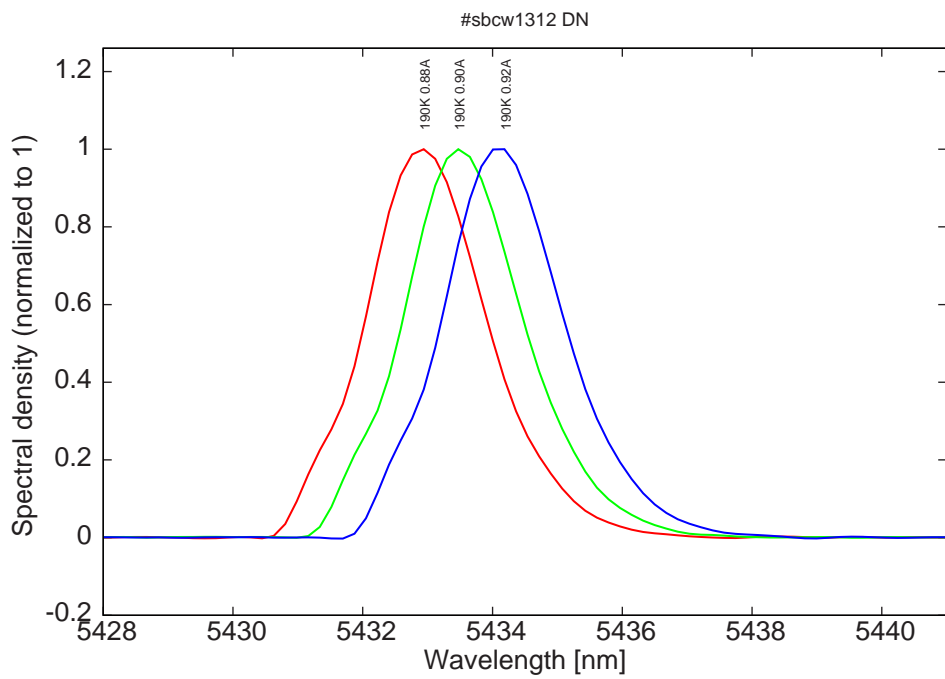


Figure 12: spectra at 190K