Blue and green nitride based laser diodes for projection

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Two fields for laser projection have attended big interest since several years due to the potential of high volume markets. One is the mobile projection; ideally a projection unit embedded in a mobile phone. For customer acceptance a reasonable price and high brightness of such a device are crucial. Mobile pico projectors need a brightness of 15 to 20 lumens. While red and blue laser with sufficient output power are available, direct green single mode laser with the necessary power are still under development. We report R&D results of single mode green laser with output power up to 200mW. This demonstrates that long term operation of green laser at 80mW to 100mW output power is realistic. The second field is the business projection with brightness up to several thousands of lumens. The concept here is to use blue high power laser as blue light source and also for the green light by conversion technology. The challenge is to reduce the cost of the light engine which is strongly dominated by the output power of the laser. We report R&D results of blue high power laser with an output power up to 3 watt.