



Contents

1. Introduction	1
2. BALs subject to matched optical feedback	7
2.1. Model of matched optical feedback	8
2.2. Experimental setup	11
2.3. Laser structure	13
2.4. Simulation of lateral emission characteristics of single-side emitting BALs	16
2.4.1. Simulation tools	17
2.4.2. Lateral-longitudinal temperature profile	22
2.4.3. Impact of longitudinal temperature profile on lateral emission characteristics	25
2.5. Tailoring longitudinal intensity and temperature profile	30
2.5.1. Symmetric vs. asymmetric facet reflectivities	30
2.5.2. Optical feedback by an actual coupled-cavity setup . . .	40
2.5.2.1. Symmetrizing longitudinal intensity profile by optical feedback	43
2.5.2.2. Lateral intensity filamentation	45
3. BALs subject to spatially mismatched optical feedback	51
3.1. Vertical displacement	53
3.1.1. Experimental setup	53
3.1.2. CO(M)D threshold and front-facet temperature	56
3.1.3. Longitudinal origin of COD	60
3.2. Lateral displacement	63
4. Conclusion	69
Appendices	71



A. Simulation parameters	73
Bibliography	77
Acknowledgments	91