ACRHEM – Laser Primer

Assignment 8 **07-11-09**

Submission date : 13-11-2009

1. Derive Eq. 5-8 from Verdeyen.

2. Indicate the corresponding points on the stability curve.

	R1	R2	d	g1	g2	Stable/unstable?
1.	10 cm	10 cm	5 cm			
2.	10 mm	10 mm	15 mm			
3.	100μm	100μm	300μm			
4.	∞	50 cm	100 cm			
5.	10mm	∞	20 mm			
6.	-67cm	-67cm	67cm			
7.	20μm	-20μm	20μm			
8.	-100μm	100μm	300μm			
9.	1m	2m	10m			
10.	1mm	2mm	10mm			

3. A resonator is made with identical mirrors with R=*2m* and are separated by *2m*. Find w_0 and $w_{1,2}$.

4. Using the ABCD matrix approach, calculate the beam waist for the cavity shown in fig 5.3 (Verdeyen).

5. For the cavities of Q2 calculate z_o and $z_{1,2}$.