

I. IDENTIFICATION DATA

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| Thesis title: | Optical system for laser beam shaping |
| Author's name: | Yaman Sanajleh |
| Type of thesis : | bachelor |
| Faculty/Institute: | Faculty of Mechanical Engineering (FME) |
| Department: | The Department of Instrumentation and Control Engineering |
| Thesis reviewer: | Ing. Jiří Čáp, Ph.D. |
| Reviewer's department: | CTU in Pragut, Faculty of Mechanical Engineering, The Department of Instrumentation and Control Engineering |

II. EVALUATION OF INDIVIDUAL CRITERIA

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| Assignment | ordinarily challenging |
| The assignment is not fundamentally demanding in the theoretical part, but also contains the experimental part, so it is suitable for the bachelor's thesis. | |

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| Fulfilment of assignment | fulfilled |
| The student presents the source research part, the design of the optical system and its experimental verification. | |

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| Methodology | correct |
| The student proceeded logically, verified the calculated parameters in the experiment and discussed the measured deviations. | |

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| Technical level | C - good. |
| The thesis contains a reasonable theoretical introduction to the basics of lasers and optical systems for beam shaping. When designing the optical system, the student applied the knowledge presented in the theoretical introduction, where he describes the optical calculations with spherical surfaces and thin lenses. | |

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| Formal and language level, scope of thesis | B - very good. |
| The language level is good, the work is clear. In chapter "Task 1: Changing the spot shape" on page 41, the focal lengths are incorrectly marked in the equations. For the calculations on pages 41 and 42 would be appropriate a reference to the derived relationships from pages 32 and 33, according to which it is calculated. | |

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| Selection of sources, citation correctness | B - very good. |
| The work is properly provided with a list of used and cited literature to which it is referred in the text. | |

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| Additional commentary and evaluation (optional) |
| Please insert your comments here. |



THESIS REVIEWER'S REPORT

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

The work fulfilled the task of designing an optical system for shaping a laser beam. Theoretical results were verified in the laboratory from the available components and deviations from the calculated assumptions were explained. Performing a successful verification experiment is beneficial for practice.

Question:

Can you describe the picture 18 of the beam homogenizer from page 26 in more detail? Show where the focal points of the optical elements are.

The grade that I award for the thesis is **B - very good**.

Date: **28.1.2022**

Signature: