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Foreword

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Introduction

There are many different types of lasers with very different attributes and very different areas of application; not all types of lasers can be treated by the same means and measures to characterize and specify their longterm behaviour and lifetime.

This International Standard covers many types of laser, but not all methods and procedures can be applied to all types.

There are lasers, primarily laser diodes in the lower power range, which are produced in large quantities and which allow the performance of lifetime tests on large quantities to gain results on a statistically significant level. In this case and if more than approximately 50 lasers are used for testing, lifetime predictions using informative annex B of IEC 61751:1998, may be applied alternatively to this International Standard.

High-power lasers are manufactured in low quantities and lifetime tests cannot be carried out on statistically significant sample sizes.

There are types of laser of which the main components cannot be repaired, e.g. sealed-tube gas lasers or semiconductor lasers. There are others that can easily be repaired, e.g. CO_2 lasers. The former class may be characterized by “lifetime”, the latter more appropriately characterized by “meantime to failure”.