

TECHNICAL REPORT

Dynamic modules –
Part 6-8: Categorization study of dynamic performance requirements

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**Dynamic modules –
Part 6-8: Categorization study of dynamic performance requirements**

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DYNAMIC MODULES –

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IEC 62343-6-8, which is a technical report, has been prepared by subcommittee SC86C: Fibre optic systems and active devices, of IEC technical committee TC86: Fibre optics.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
86C/1009/DTR	86C/1033/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62343 series, published under the general title *Dynamic modules*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
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- amended.

A bilingual version of this publication may be issued at a later date.

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DYNAMIC MODULES –

Part 6-8: Categorization study of dynamic performance requirements

1 Scope

This technical report outlines the categorization of dynamic performance requirements for dynamic modules. There are many kinds of dynamic modules in the marketplace with many different transient performance requirements. First, they are distinguished between the performance requirements for steady state and the transient state behaviour. Next are the requirements for transient characteristics during the transition period. Finally, a three-level categorization for the transient performance requirements is presented.

2 Categorization background

The most important feature of dynamic modules is that their optical performance can be changed by sending external commands and/or requests. Before and after receiving the command, the dynamic module should maintain its optical performance in the steady state as shown in Figure 1. This condition is called Level-0. During this steady state, any performance requirements, such as optical performance, reliability, and measurement method, are the same as those of completely passive devices. In contrast, the performance requirements with respect to the transient characteristics have been insufficiently studied and may vary according to the system applications. In this report, the requirements for the transient characteristics during transition period are categorized into three levels of complexity.

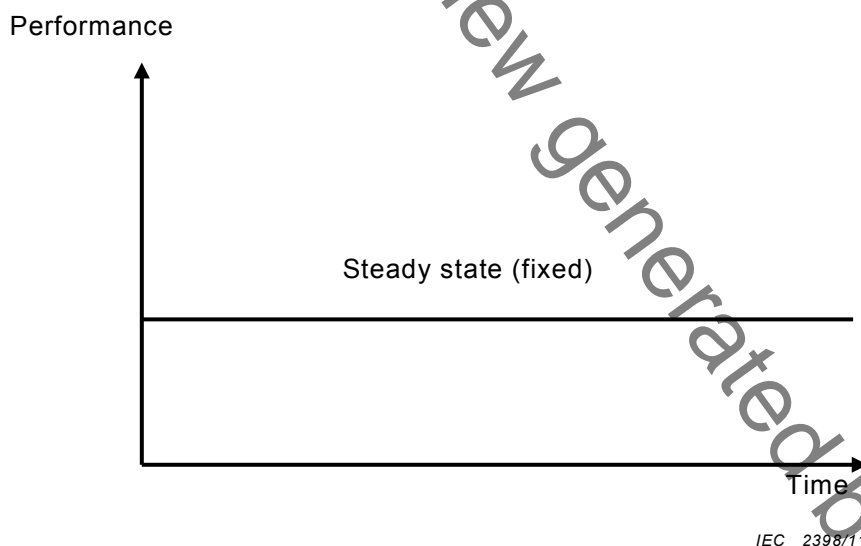


Figure 1 – A schematic illustration of Level-0

3 Categorization levels

3.1 Level -1

This level is the least complex. The transient characteristics during the transition period are free from any restriction. For example, in the case of a variable optical attenuator (VOA) with a 1×2 optical switch used for the redundancy, some overshoot or undershoot is acceptable. Because the signal is shut down by the optical switch during the time from t_0 to t_1 , as