

## **Flickermeter - Functional and design specifications**

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Võtmesõnad: design, flicker meter, measuring instrument, performance, specification, test,

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Descriptors: Measuring instrument, flickermeter, design, performance, specification, test

English version

## Flickermeter — Functional and design specifications

(IEC 868 : 1986 + A1 : 1990)

Flickermètre — Spécifications fonctionnelles  
et de conception  
(CEI 868 : 1986 + A1 : 1990)

Flickermeter — Funktionsbeschreibung und  
Auslegungsspezifikation  
(IEC 868 : 1986 + A1 : 1990)

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## CENELEC

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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### **Foreword**

At the request of 72 Technical Board, HD 498 S2 : 1992 (IEC 868 : 1986 + A1 : 1990) was submitted to the CENELEC voting procedure for conversion into a European Standard.

The text of the International Standard was approved by CENELEC as EN 60868 on 9 March 1993.

The following dates were fixed:

- latest date of publication  
of an identical national  
standard (dop) 1994-03-01
- latest date of withdrawal  
of conflicting national  
standards (dow) -

Annexes designated 'normative' are part of the body of the standard. In this standard, annex ZA is normative.

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## FLICKERMETER FUNCTIONAL AND DESIGN SPECIFICATIONS

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### INTRODUCTION

This report gives a functional and design specification for flicker measuring apparatus intended to indicate the correct flicker perception level for all practical voltage fluctuation waveforms. Sufficient information is presented to enable such an instrument to be constructed.

The method of flicker severity assessment from flickermeter output data will form the subject of other publications.

In its present form, this report is not intended to be an appendix to IEC Publications 555-3: Disturbances in Supply Systems Caused by Household Appliances and Similar Electrical Equipment, Part 3: Voltage Fluctuations.

This report is based on specifications prepared by the Disturbances Study Committee of the International Union for Electroheat (UIE).

#### 1. Scope and object

The purpose of this report is to provide basic information for the design and the implementation of an analogue or digital flicker measuring apparatus.

It does not specify the method of calculating a flicker severity value, or give tolerable limit values.

#### 2. Description of the instrument

The description given below is based on an analogue implementation. A partly or completely digital meter is equally acceptable provided that it offers the same functional characteristics.

The flickermeter architecture is described by the block diagram of Figure 1, page 29, and can be divided into two parts, each performing one of the following tasks:

- simulation of the response of the lamp-eye-brain chain;
- on-line statistical analysis of the flicker signal and presentation of the results.

The first task is performed by blocks 2, 3 and 4 of Figure 1, whilst the second task is accomplished by block 5. Although this last block is not mandatory, as flicker signal analysis can be performed off-line using a suitable recording medium, its inclusion is recommended because it will allow a more complete and efficient use of the instrument.

##### 2.1 Block 1 — Input voltage adaptor and calibration checking circuit

This block contains a signal generator to check the calibration of the flickermeter on site and a voltage adapting circuit that scales the mean r.m.s. value of the input mains frequency voltage down to an internal reference level. In this way flicker measurements can be made independently from the actual input carrier voltage level and expressed as a percent ratio. Taps on the input