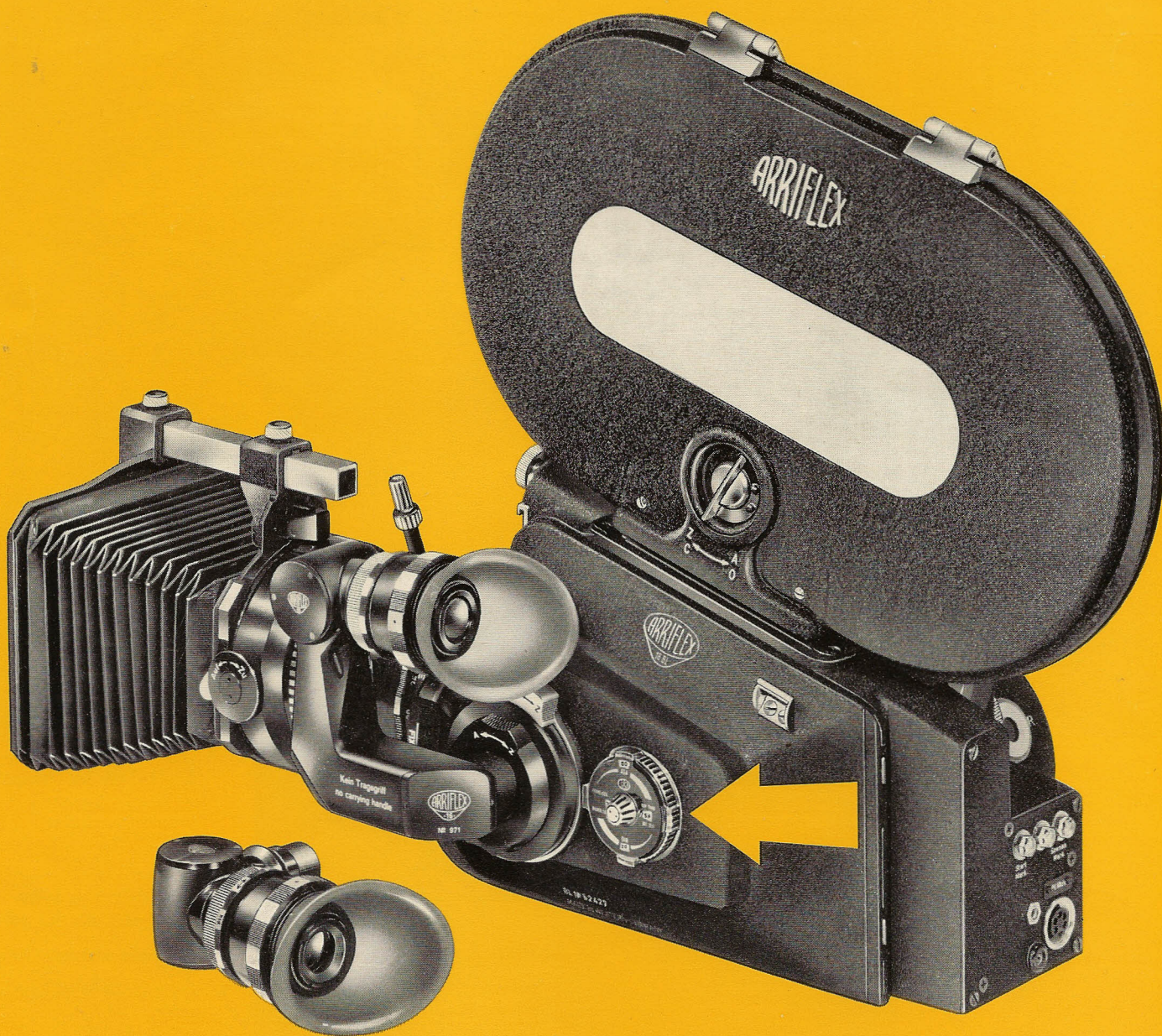




The Professional Through-the-Lens Exposure Control System for the ARRIFLEX 16 BL



Functional schematic of the 16 BL CdS exposure control system

Symbols

Below left: I-III
Operating controls
for data input

1-5
Taking and view-
finder light path

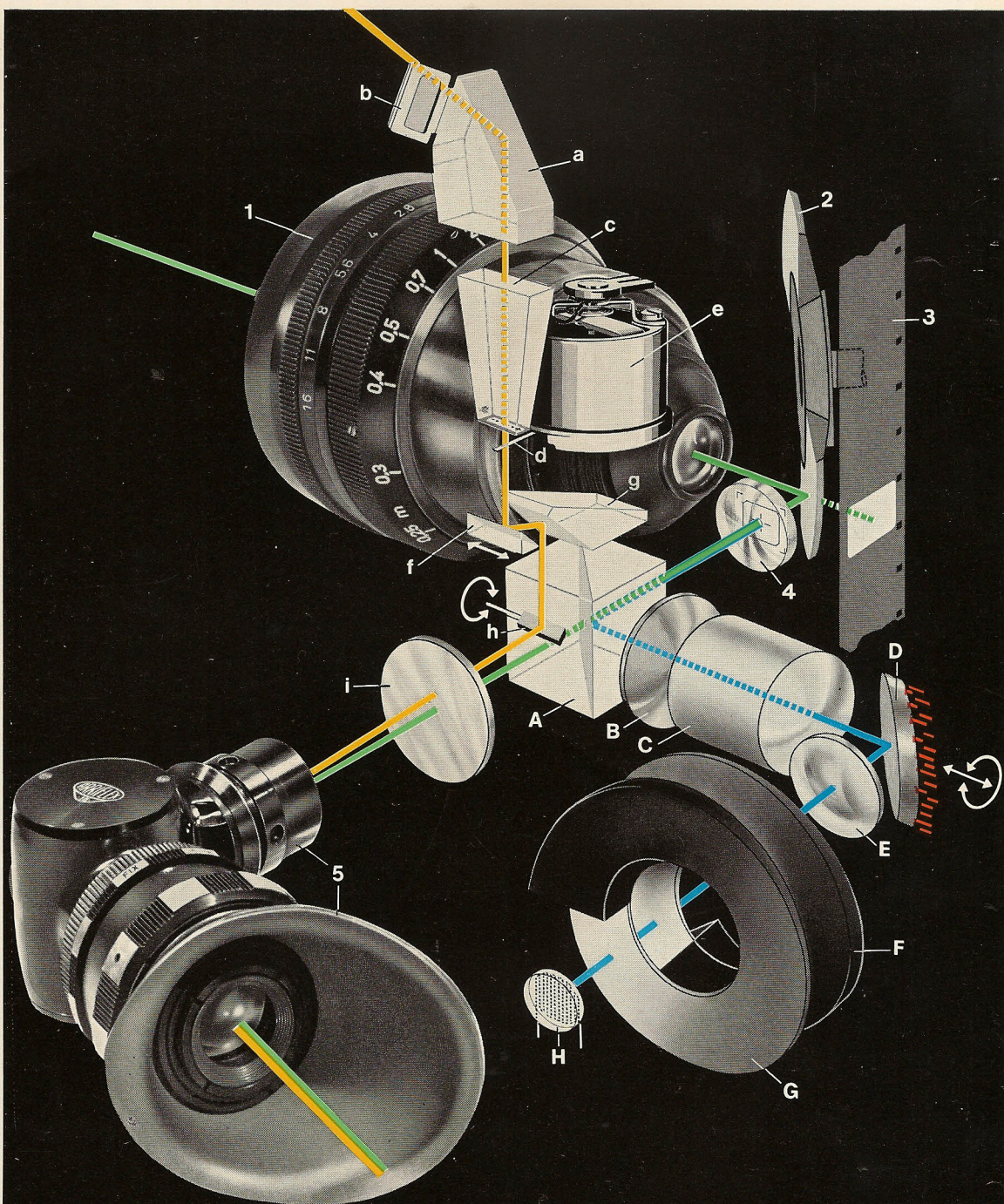
A-H
Measuring light
path

a-i
Light path for
projection of
meter reading

Separated
infrared "IR"

Operating Controls for Data Input

- I Knurled disc for film speed setting in DIN or ASA (neutral density wedge adjustment)
- II Knurled knob for framing rate or exposure time setting (neutral density wedge adjustment)
- III Index support



Taking and Viewfinder Light Path (including optical components)

- 1 Taking lens (interchangeable)
- 2 Mirror shutter
- 3 Film
- 4 Ground glass (with frame marking)
- 5 Finder (interchangeable against offset finder)

items 1-5: standard optical equipment for camera

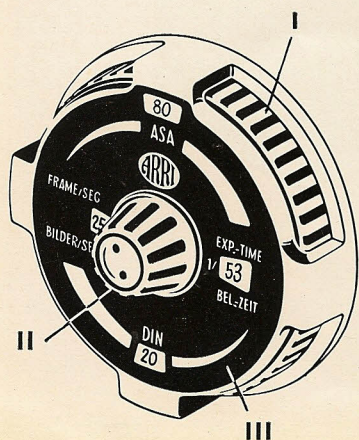
Measuring Light Path (including optical components)

- A Beam splitter
- B First lens element
- C Second lens element
- D Reflecting mirror (gold mirror)
- E Third lens element
- F N. D. wedge for exposure time
- G N. D. wedge for film speed
- H CdS photoresistor

adjustable as a unit in two coordinates for the concentric illumination of the photoresistor

Light Path for Projection of Meter Reading (including associated components)

- a Light collecting prism
- b Matte with slot for gelatine filters (brightness attenuation for meter scale)
- c Light guide block with meter scale
- d Indicator
- e Galvanometer instrument
- f First reflecting mirror (adjustable for horizontal position of meter scale)
- g Second reflecting mirror
- h Third reflecting mirror (height adjustment to lower frame edge)
- i Protecting glass



The TTL Exposure Control System for the ARRIFLEX 16 BL

The exposure control system is adjustable from 13–28 DIN (16–500 ASA) and 25 (24) – 50 fps.

The exposure indication is visible on a projected meter scale in the viewfinder. After setting film speed and exposure time (fps) the meter needle is correctly centred by opening or closing the lens iris. The outer scale indexes marked with + and – represent about one stop over- or underexposure.

The indication is compensated between stationary and operating camera. When starting the camera, the indicator deflects slightly and returns to the previous position after a few seconds.

The standard finder (type A) and the offset finder (type B) can be used by choice. The exposure reading is thereby unaffected.

The illumination of the indicator scale is achieved by a light collecting prism (a) in the finder door. The hinged matte (b) serves to attenuate the brightness of the indicator scale. Gelatine filters can be inserted in the matte slot to tone the scale at will.

When measuring with stationary camera the entire finder image must be visible since the light to be measured is diverted from the viewfinder's light path. If the image is only partly visible, the cell receives correspondingly less light and causes an erroneous reading.

The use of filters does not require exposure computations, since their extension factors are automatically taken into account in TTL measurements. When using films with two exposure indexes for daylight and tungsten photography, always set the meter for the higher speed.

All other factors influencing exposure, such as extreme lens extension in close-ups, different transmissions of various lens types (difference between f and T stop) etc., are also automatically measured and need not be additionally considered.

The measured image area corresponds to approx. $\frac{1}{3}$ of the film area in the centre, irrespective of focal lengths used.

A spot measurement can be made with a zoom lens in order to measure important image details separately. Measuring takes place at the telephoto position and then the lens is reset for the desired focal length.

Please note before shooting recommences after extended breaks: response of all photoresistors is affected by long periods in the dark. It is recommended that the camera shutter should always be turned to the viewing position and the lens iris should be opened. This procedure exposes the cell to the light and restores correct operating characteristics.

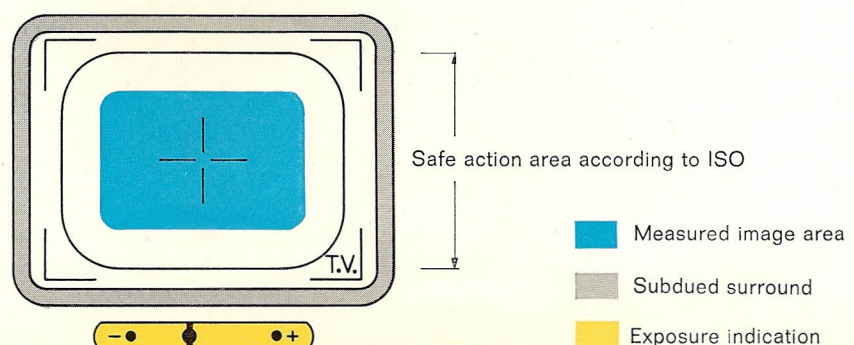
With functioning start marking system for pilotone recordings additional light impinges on the photocell from the full frame marker lamp, causing the indicator to deflect momentarily. It is recommended to transfer to edge marking by removing the full frame bulb.

The exposure control system is energized by the camera battery and the meter is live when the battery is connected.

A battery charge indicator is provided when the meter indicator with operating camera does not settle and the switch-over relay is audibly activated. The battery must then be charged or replaced.

(It would take the exposure control system alone approximately 500 hours to discharge the battery, even though the camera should be disconnected for longer storage periods).

Ground glass image and
exposure indication as seen in
viewfinder



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