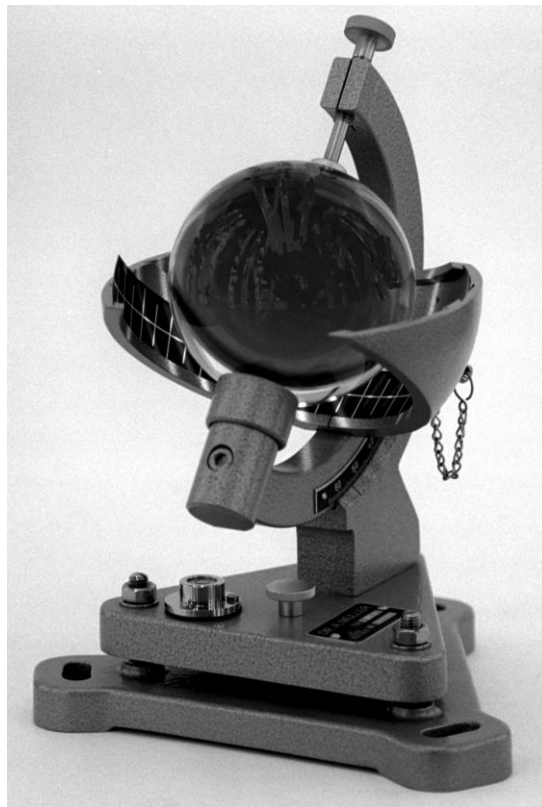


SUNSHINE RECORDERS

Campbell-Stokes Type



Type: 96d

Sunshine recorders automatically registering time and duration of insolation are used at meteorological and climatological research centres, observatories, spas and health resorts, in agriculture, horticulture, viticulture and vegetable gardening.

The instruments are set up on flat roofs or on clear ground in such manner as to be well exposed to solar radiation, during the whole day. The type of instrument to be chosen depends on the latitude of the place installation.

Working principle

This recorder consists essentially of a glass sphere of 96 mm diameter mounted concentrically in a section of a spherical metal bowl, the diameter of which is such that the sun's rays are focussed sharply on a card held in the grooves, in the bowl. Three overlapping pairs of grooves are provided in the bowl to take up cards suitable for the different seasons of the year.

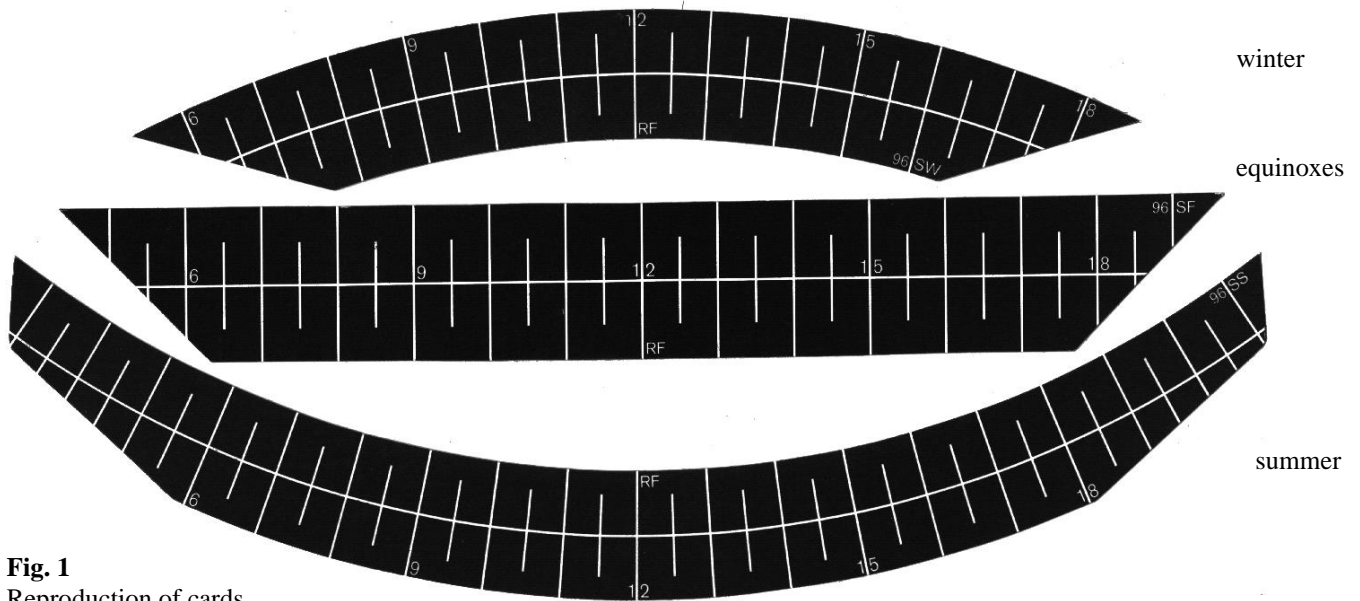


Fig. 1
Reproduction of cards

The sphere is made of uniform and well annealed colourless glass and is carefully ground and polished with great precision.



Type: 96c



Installation

Following manipulations are necessary when installing the recorder:

- a) The base should be levelled.
- b) The bowl should be so adjusted that the centre line of the equinoctial card lies in the celestial equator (the scale line of latitude marked on the bowl facilitates this).
- c) The vertical plane through the centre of the sphere and the noon mark on the bowl must be in the place of the meridian.

If the instrument is correctly adjusted the image will fall on the bowl or card and the traces of the image will be parallel to the central lines of the cards, during the whole year. Local apparent time is obtained by subtracting the equation for time from local mean time.

Accurate installation is greatly facilitated by means of the levelling plate (cover picture), which is provided with three oblong holes for the purposes of fastening it. Adjustment with in the meridian is effected by turning the levelling plate and simultaneously watching the trace of the image on the card.

The base plate of the sunshine recorder rests on three points in three corresponding slots of the levelling plate. The three points are formed by a fixed pin and two forcing screws. With the aid of these screws and of an air level fixed on the base plate, this latter is adjusted as to the horizontal plane. The base plate by tightening knurled screw.

For an occasional cleaning of the instrument or for thawing-off coating of ice, it can very easily be taken off after having loosened the knurled one screw. When being replaced, the instrument will always occupy exactly the same position as before. There is no need for readjustment.

Assembly

No.	Sunshine recorder 96c	Sunshine recorder 96d
for use in latitudes	5° S to 45° N or 5° N to 45° S	25° N to 65° N or 25° S to 65° S
Period of recording hours	14	18
Changing of cards	daily	daily
Dimensions (mm)*	205 x 185 x 290	205 x 185 x 290
Weight (kg)	5,2	5,2

*depending from operation position including base plate

Accessories (without additional charge):
1 set of record cards (sufficient for 1 year)
1 levelling plate

Additional and Spare Parts

SO19 T39 Spare glass sphere

Heating Device for Sunshine Records

On Request the sunshine recorders are equipped with an electric heating device, which eliminates the formation of ice, snow, and hoar-frost, on the glass sphere. To this end the cylindrical socle arranged on the graduated arc, on which the glass sphere is resting, is provided with a hollow by turning, into which the heating element is fitted. This is fed via the connected cable of 20 metres length with d.c. or a.c. of 24 volts and has a heating capacity of appr. 30 watts. Transmission of the heat from the metal socle to the glass sphere suffices to keep this latter free from coatings of ice, snow, hoarfrost, etc., also under severe climatic conditions. If required, the heating device is to be ordered together with the sunshine recorder, as subsequent mounting of the device is impossible without having the instrument sent back to the factory.

Table of the available Record Cards

For Instr. No.	Yearly (Seasonal) Division	For Northern Latitudes		For Southern Latitudes		Weight (kg)
		No. for 1 Year's Supply	No. for 100 Cards	No. for 1 Year's Supply	No. for 100 Cards	
96c	1 year = 400 cards, consisting of:	97NA 5°S to 45°N		97SA 5°N to 45°S		1,0
	100 cards for spring and autumn		97NF		97SF	0,25
	150 cards for summer		97NS		97SS	0,25
	150 cards for winter		97NW		97SW	0,25
96d	1 year = 400 cards, consisting of:	96NA 25°N to 65°N		96SA 25°S to 65°S		1,0
	100 cards for spring and autumn		96NF		96SF	0,25
	150 cards for summer		96NS		96SS	0,25
	150 cards for winter		96NW		96SW	0,20

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