

Meteorological visibility is defined as the greatest distance at which a black object can be seen and recognised against the horizon or sky or, in the case of night observations, could be seen and recognised if the general illumination were raised to the normal daylight level.

- ✓ It is important that an object is not merely seen but is identifiable as a specific object.
- ✓ Try to observe from a place where you have an uninterrupted view of the horizon while standing on the ground.
- ✓ If the visibility varies from one direction to another, you should always report the **lowest value**. If there is a marked variation in different directions, make a note of this.
- ✓ Visibility must be estimated in a **horizontal** direction at eye level above the ground. Do not measure visibility from high buildings, for example. Ignore anything such as a nearby hill top above the site being hidden by cloud. If you have a hill-top site, a fog bank in a nearby river valley would not influence the horizontal visibility.

Visibility objects

At your station you should have a list specifying all the visibility objects, along with their distance, their bearing in degrees from true north and from what position to view them. It is very helpful to have this list prominently displayed, ideally with a map indicating the objects in a diagram and/or panoramic photographs.

The visibility objects should be selected in as many directions as possible. Ideally, they are black or dark-coloured, standing above the horizon or in stark contrast to their background. The list should identify and provide the distance of nearby trees, buildings, etc, in metres, and that of more distant features, such as hill tops, in kilometres. It should also show true north and the bearing of each feature.

Daytime visibility

- ✓ Remember that if you can see the object clearly, report the visibility as greater than the distance between you and the object. For example, if you see a hill at 30 km and you can see it very clearly, you should report a visibility greater than 30 km.

Night-time visibility

At night, reports of visibility indicate the same degree of atmospheric transparency as they would indicate by day. The change from daylight to darkness does not itself affect the visibility. If changes do occur, they are the result of an alteration in the number of minute particles held in suspension in the atmosphere. The most suitable objects for determining the visibility at night are the silhouettes of buildings, trees, hills and mountains against the sky, or unfocused lights of known intensity and distance.

- ✔ Allow at least 2 minutes in darkness for your eyes to adjust to night vision.
- ✔ You must take care using lights at night because certain characteristics (e.g. colour) can affect the light intensity.

Automatic sensors

Many sites (e.g. those with SAMOS) now have automatic instruments for measuring the visibility. These are usually visiometers, which consist of remote transmitting and receiving equipment and a local

display unit. The equipment is sited to be representative of an area 5 km in radius. However, automatic visibility sensors can only measure the visibility between the projector and receiver, and this is not necessarily a representative value.

- ✔ You must make a manual check of the visibility in all directions and then report the lowest visibility observed.
- ✔ Clean the visiometer to keep it free of dirt.



Visiometer

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