

Light and fog, traffic safety in winter and spring

Fog is formed by the diffusion of water vapor in the air into liquid droplets.

The greater the concentration of fog particles, the lower the visibility (the distance at which objects can be seen with normal vision).

Therefore, traffic safety practitioners pursue the relationship between "light and fog," hoping to use light to see objects along the road on foggy days.



On foggy days with visibility, reflective signs cannot be seen clearly.

Light, with different colors, has different wavelengths. Light with longer wavelengths is easier to bypass water droplets in fog and travel a longer distance. At the same time, objects that emit light with longer wavelengths are more dazzling, making the objects themselves invisible.

When white light shines on a transparent object, the light that passes through is mainly the same color as the transparent object. Other colors are absorbed by the transparent object. In other words, all colors of light are reflected, turning the fog into a white mist. Therefore, relying on the white light of vehicles is unable to see objects along the road in foggy areas. Reflective traffic signs relying on the reflection formed by the light of the vehicle's headlights also cannot reflect light and cannot be seen.



When light shines into fog, it becomes a white mist.

In traffic safety in foggy areas, there should be two pursuits: one is to pursue the dazzling effect of light (regardless of visual effects) to form a sense of boundaries. In this case, the efficiency of dazzling is determined

by the wavelength.



Using extremely long-wavelength light to "dazzle" achieves guidance in foggy areas.

Another pursuit is to ensure that important objects along the road (such as contours, signs, facilities, etc.) are visible and clear. In this case, the object itself emits light, and the wavelength and color of the light determine the visual effect within the visibility range.



Using excellent color temperature, chromaticity, and wavelength to create luminous signs, they can be seen clearly in foggy areas with visibility.

In foggy weather, where there is relative visibility, there are technical methods for visibility and travel; where there is absolutely no visibility, travel is abandoned.