



Abstract

ALERTNESS MONITOR

An alertness monitoring system uses reflectance measurement of infrared light pulses to
5 monitor eye movement of a vehicle or machine operator. The data is used to measure
eye and eyelid movement for presence slow or drifting eye movements, and/or eyelid
closure and optionally one or more of, absence of saccadic movement, loss of eye co-
ordination, wavering eyelids, partial eye closure, and drooping eyelids as indicators of
loss of attention and drowsiness. The eye movements of a subject are analysed using
10 reflected infra red light to obtain measures of the blink amplitude velocity ratio and the
saccade amplitude velocity ratio. The readings are continuously compared with eye
movement data indicative of degrees of alertness which correlate to blood alcohol
content values so that the monitor provides an indication of the operator's legal fitness
to operate the vehicle or machine from the point of view of drowsiness no matter how it
15 is caused.

Fig. 2



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