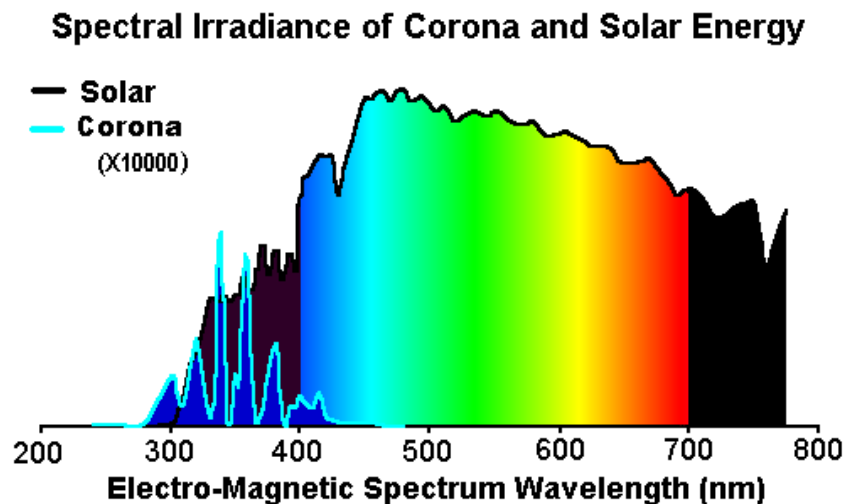


The CoroCAM series of products detect UV emissions generated by corona (the ionisation of air).

The UV emission is shown below, overlaid onto the natural sunlight spectrum. The visible range is from 400nm to 700nm.



The UV emission from coronas is so faint that even after 10 000x amplification it barely peaks above the natural sunlight spectrum. You may have noticed that the sunlight spectrum drops to near zero intensity at 300nm, but there is still UV from the corona visible. This is due to the fact that the O-Zone layer absorbs virtually all the UV below 300nm. Therefore the UV available below 300nm is from man-made sources.

Virtually all fires emit some radiation in the UVC band, while the Sun's radiation at this band is absorbed by the Earth's atmosphere. The result is that the UV detector is "solar blind", meaning it will not cause an alarm in response to radiation from the Sun, so it can easily be used both indoors and outdoors.

[http://en.wikipedia.org/wiki/Corona\\_discharge](http://en.wikipedia.org/wiki/Corona_discharge)

## Problems caused by corona discharges

Coronas can generate audible and radio-frequency noise, particularly near electric power transmission lines. They also represent a power loss, and their action on atmospheric particulates, along with associated ozone and NO<sub>x</sub> production, can also be disadvantageous to human health where power lines run through built-up

areas. Therefore, power transmission equipment is designed to minimise the formation of corona discharge. Corona discharge is generally undesirable in:

Electric power transmission, where it causes:

Power loss

Audible noise

Electromagnetic interference

Inside electrical components such as transformers, capacitors, electric motors and generators. Corona progressively damages the insulation inside these devices, leading to premature equipment failure. One form of attack is ozone cracking of elastomer items like O-rings.

Situations where high voltages are in use, but ozone production is to be minimised

Static electricity discharge Coronas can be suppressed by corona rings, toroidal devices that serve to spread the electric field over larger area and decrease the field gradient below the corona threshold.

And there are likely to be a number of other possible applications that have not yet been realised or quantified

Infrared Technologists