

# M-SYSTEM® & FLASH PROTECT®

## Technology that protects your eyes

The reaction time of standard filters, however fast, still exposes the eye to artificial optical radiation. In spot welding, this “micro flash” multiplies for hundreds or thousands of times a day.

**FLASH PROTECT® is the right choice to protect the health of welding operators.**

Artificial optical radiation exposure time comparison between torches equipped with FLASH PROTECT® system and standard torches during an 8-hour spot-welding shift, considering a work hypothesis with 400 spot welds per hour.

400 spot welds per hour	FLASH PROTECT* SYSTEM (0,00 ms)	HIGH QUALITY FILTERS* (0,15 ms)	MEDIUM QUALITY FILTERS* (0,25 ms)	LOW QUALITY FILTERS* (0,40 ms)
1 h	0,00 s	0,08 s	0,13 s	0,20 s
2 h	0,00 s	0,12 s	0,20 s	0,32 s
3 h	0,00 s	0,18 s	0,30 s	0,48 s
4 h	0,00 s	0,24 s	0,40 s	0,64 s
5 h	0,00 s	0,30 s	0,50 s	0,80 s
6 h	0,00 s	0,36 s	0,60 s	0,96 s
7 h	0,00 s	0,42 s	0,70 s	1,12 s
8 h	0,00 s	0,48 s	0,80 s	1,28 s

\* with standard torches.

### RISKS FOR THE OPERATOR

... chronic conjunctivitis is the most common affection; the agents in question are primarily UV radiation in arc welding ...

... some studies report the appearance of retinal degeneration and maculopathy in subjects that perform arc welding ...

... a recent revision of literature reveals an increased risk of developing ocular melanoma in electrical arc welding (Dixon and Dixon, 2004) ...

Ing. Federica Riva

intervention at the seminar:

**The assessment of the risk of artificial optical radiation**

Taken from the article:

Artificial optical radiations Risks for welders from the newspaper Puntosicuro.

### HEALTHIER IS STRONGER

**Protecting workers against hazards due to exposure to artificial optical radiations.**

In accordance with the Community Directive 92/57/CEE. The workers good health is the most precious thing for a company, that should pay particular attention “to the existence of alternative work equipment designed to reduce the levels of exposure to the artificial optical radiation”.

Each country fulfils the same principals through their own detailed regulations.

The safety of the welding operator, therefore, is no longer just a responsible choice of the employer, but a clear legal obligation.

TYPE	SUBTYPE	PART OF THE BODY IN RISK	POSSIBLE DAMAGES
ULTRAVIOLET	UVA UVB UVC	<b>EYE</b> Cornea Conjunctiva Crystalline lens  <b>DERMIS</b>	Photokeratitis Conjunctivitis Cataracts (opaque crystalline) Erythema Elastosis Early aging and skin cancers
	UVA	<b>EYE</b> Crystalline lens	Cataracts (opaque crystalline)
VISIBLE LIGHT	BLUE LIGHT	<b>EYE</b> Retina	Photoretinitis
	INTENSE LIGHT	<b>EYE</b> Retina <b>DERMIS</b>	Burns to retina Burns to dermis
INFRARED	IRA	<b>EYE</b> Retina	Burns to retina
	IRA IRB	<b>EYE</b> Cornea and crystalline lens  <b>DERMIS</b>	Burns to cornea Burns to dermis