

**APPENDIX D
FILTER LENSES FOR PROTECTION AGAINST RADIANT ENERGY**

FILTER LENSES FOR PROTECTION AGAINST RADIANT ENERGY			
OPERATIONS	PLATE THICKNESS (INCHES)	PLATE THICKNESS (MM)	MINIMUM* PROTECTIVE SHADE
Gas Welding: Light Medium Heavy	Under 1/8 1/8 to 1/2 Over 1/2	Under 3.2 3.2 to 12.7 Over 12.7	4 5 6
Oxygen Cutting Light Medium Heavy	Under 1 1 to 6 Over 6	Under 25 25 to 150 Over 150	3 4 5
OPERATIONS	ELECTRODE SIZE 1/32 IN.	ARC CURRENT	MINIMUM* PROTECTIVE SHADE
Shield metal Arc welding	Less than 3	Less than 60	7
	3 to 5	60 to 160	8
	more than 5 to 8	161 to 250	10
	more than 8	251 to 550	11
Gas metal arc welding and flux	cored arc welding	Less than 60	7
		60 to 160	10
		161 to 250	10
		251 to 500	10
Gas tungsten arc	welding	Less than 50	8
		50 to 150	8
		151 to 500	10
Air carbon Arc cutting	(Light)	Less than 500	10
	(Heavy)	500 to 1000	11
Plasma arc welding		Less than 20	6
		20 to 100	8
		101 to 400	10
		401 to 800	11
Plasma arc cutting	(Light)**	Less than 300	8
	(Medium)**	300 to 400	9
	(Heavy)**	401 to 800	10
Torch brazing			3
Torch soldering			2
Carbon arc welding			14
<p>* As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade that gives a sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.</p>			
<p>** These values apply where the actual arc is clearly seen. Experience has shown that light filters may be used when the arc is hidden by the workpiece.</p>			