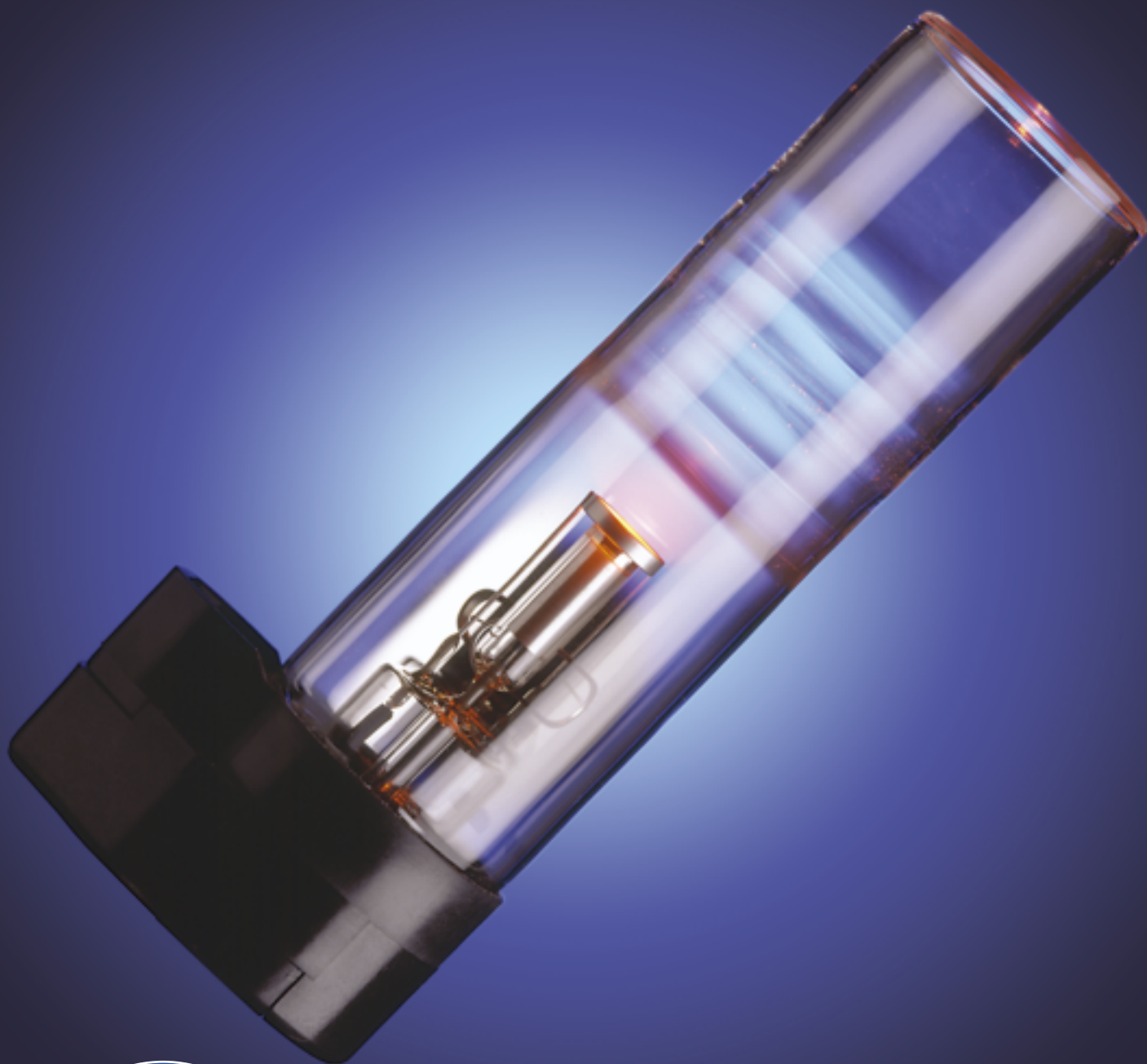


HOLLOW CATHODE LAMPS FOR PERKIN ELMER AAS



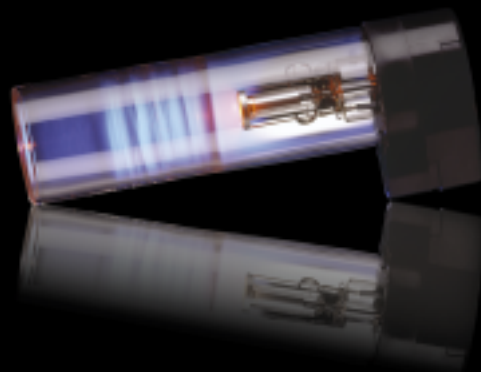
PHOTRON PTY. LTD.

SPECIALISTS IN LIGHT SOURCES

for use in analytical spectroscopy. The principles of Photron each have more than 40 years experience both in the design of spectroscopic instruments and light sources. The design for all lamps produced are based on actual use and experience with atomic absorption, UV-visible spectrophotometers and other spectroscopic instruments.

Constant development of alloys, intermetallic species and cathode surface technology ensures the analyst of the best possible line source for atomic absorption spectroscopy (AAS).

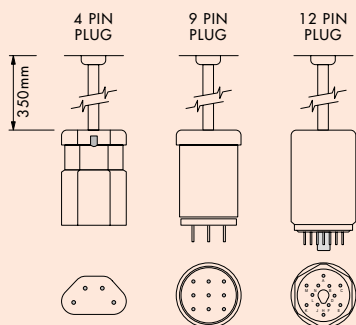
Stringent process conditions, modern and efficient high vacuum equipment coupled with intelligent selection of internal components provide Photron's Hollow Cathode lamps (HCL's) with fast warm up times and an extended shelf life guaranteed for 5 years from the date of manufacture.



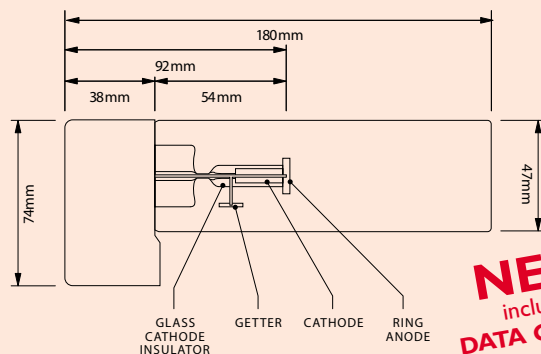
Perkin Elmer Hollow Cathode Lamps

These hollow cathode lamps are produced to provide direct use without adapters in all Perkin Elmer AAS instruments. All windows on these lamps are fully fused and contain no "gassy" adhesives which drastically reduce shelf life.

- ▶ Totally hermetic glass seals ensures a clean fill gas and cathode for the life of the lamp and most importantly a shelf life longer than 5 years.
- ▶ The application of the same glass cathode shielding technique used in all Photron hollow cathode lamps gives maximum stability and reliability throughout lamp life.
- ▶ Due to the elegantly simple design of the electrode geometry of the Photron lamps, less mass is present within the lamp, reducing outgassing and making the lamp more resistant to breakage from lateral shock.

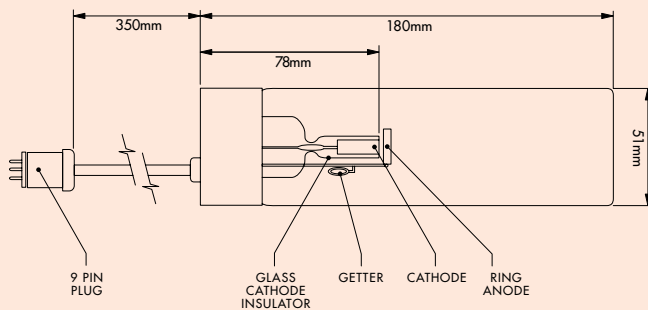


THREE PLUG TYPES AVAILABLE



NEW
including
DATA CODING

P900LL = This is a 2" HCL with a cableless 4 pin plug with coding recognition and 10,000mA/hour timer. They are used in all AAnalyst instruments.



P900 = This is a 2" HCL with a 9 pin plug and cable. They are used in old AAS instruments not listed below.

P900C = This is a 2" HCL with a 12 pin plug and cable with coding recognition. They are used in the following AAS instruments :- SIMAA6000, 5100(PC), 4110ZL, 4100, 4100ZL, 3300, 2100 and 1100(B)

P900L = This is a 2" HCL with a 4 pin plug and short cable. They are used as a cheaper alternative for all AAnalyst instruments. (No coding)

Element Selection Table

ELEMENT	PART No.	PRIMARY WAVE LENGTH	ALTERNATIVE WAVE LENGTH	WINDOW MATERIAL
Al	P901	396.2	308.2 - 309.3	UV
Sb	P902	217.6	206.8 - 217.9	Q
As	P903	193.7	189.0 - 197.2	Q
Ba	P904	553.5	455.4 - 493.4	B
Be	P905	234.9	–	Q
Bi	P906	223.1	222.8 - 227.7	Q
B	P907	249.8	208.9	UV
Cd	P908	228.8	326.1	Q
Ca	P909	422.7	239.9	UV
Cs	P910	852.1	455.6	B
Ce	P911	520.0	569.7	B
Cr	P912	357.9	425.4 - 427.5	B
Co	P913	240.7	304.4	Q
Cu	P914	324.8	217.9 - 218.2	UV
Dy	P915	421.2	404.6	B
Er	P916	400.8	389.3	B
Eu	P917	459.4	462.7	B
Gd	P918	368.4	405.8 - 407.9	B
Ga	P919	294.4	403.3 - 417.2	UV
Ge	P920	265.2	271.0	UV
Au	P921	242.8	267.6	Q
Hf	P922	307.8	268.2	UV
Ho	P923	410.4	425.4 - 405.4	B
In	P924	303.9	325.6 - 410.2	UV
Ir	P925	208.9	264.0 - 266.5	Q
Fe	P926	248.3	248.8 - 372.0	UV
La	P927	550.1	403.7	B
Pb	P928	283.3	217.0 - 261.4	Q
Li	P929	670.8	323.3	B
Lu	P930	335.9	356.7 - 337.6	B
Mg	P931	285.2	202.5	UV
Mn	P932	279.5	279.8 - 280.1	UV
Hg	P933	253.7	–	UV
Mo	P934	313.3	320.9	UV
Nd	P935	492.5	463.4	B
Ni	P936	232.0	231.1 - 341.5	Q
Nb	P937	334.9	405.9 - 408.0	UV
Os	P938	290.9	305.9 - 426.0	UV
P	P974	213.6	–	Q
Pd	P939	247.6	244.8 - 340.5	Q
Pt	P940	265.9	264.7 – 299.8	UV
K	P941	766.5	404.4 - 769.9	B
Pr	P942	495.1	513.3	B

ELEMENT	PART No.	PRIMARY WAVE LENGTH	ALTERNATIVE WAVE LENGTH	WINDOW MATERIAL
Re	P943	346.0	346.5	B
Rh	P944	343.5	328.1 - 369.2	UV
Rb	P945	780.0	794.8	B
Ru	P946	349.9	392.6	B
Sm	P947	429.7	476.0	B
Sc	P948	391.2	390.8	B
Se	P949	196.0	204.0	Q
Si	P950	251.6	250.7 - 251.4	Q
Ag	P951	328.1	338.3	B
Na	P952	589.0	330.2 - 589.6	UV
Sr	P953	460.7	407.8	B
Ta	P954	271.5	275.8	UV
Te	P955	214.3	225.9	Q
Tb	P956	432.7	431.9 - 433.8	B
Tl	P957	276.7	258.0	UV
Th	P958	371.9	–	B
Tm	P959	371.8	436.0 - 410.6	B
Sn	P960	235.5	224.6 - 266.1	Q
Ti	P961	364.3	365.4 - 399.0	B
W	P962	255.1	294.7 - 400.9	UV
U	P963	358.5	356.6 - 351.4	B
V	P964	318.5	306.6 - 318.4	Q
Yb	P965	398.8	346.4	B
Y	P966	410.2	414.2	B
Zn	P967	213.9	307.6	Q
Zr	P968	360.1	468.7 - 354.8	B

Add suffix, C, L or LL for desired electrical connection. (see page 2)

Multi Element Lamps

Ca	P970	422.7	239.9	Q
Mg		285.2	202.5	
K	P971	766.5	404.4	UV
Na		589.0	330.2	
Cu	P972	324.8	217.9	Q
Zn		213.9	307.6	
Cr	P973	425.4		Q
Co		240.7		
Cu		324.8		
Fe		248.3		
Mn		279.5		
Ni		232.0		

Q =PURE FUSED SILICA (SPECTROSIL B) B=BOROSILICATE UV = UV BOROSILICATE

CODE	DESCRIPTION
P204	Adaptor Kit, 37mm Lamps - PE AA (9 Pin)
P204C	Adaptor Kit, 37mm Lamps - PE Coded AA (12Pin)
P204L	Adaptor Kit, 37mm Lamps - PE AAnalyst (4 Pin)
P207	Adaptor, PE 12 Pin Lamp - PE AA (9 Pin)
P208	Adaptor, PE 9 Pin Lamp - PE AAnalyst (4 Pin)
P210	Adaptor, PE 12 Pin Lamp - PE AAnalyst (4 Pin)
P211	Adaptor, PE 9 Pin Lamp - PE Coded AA (12 Pin)
P215	Adaptor, PE AAnalyst (4 Pin) Lamp - PE Coded AA (12 Pin)
P216	Adaptor, PE AAnalyst (4 Pin) Lamp - PE AA (9 Pin)
P220	Adaptor, Super Lamp Power Supply - PE AA (9 Pin)
P220C	Adaptor, Super Lamp Power Supply - PE Coded AA (12 Pin)
P220L	Adaptor, Super Lamp Power Supply - PE AAnalyst (4 Pin)



Multi Element Lamps Selection Table

CODE	ELEMENT SYMBOL	CODE	ELEMENT SYMBOL	CODE	ELEMENT SYMBOL	CODE	ELEMENT SYMBOL
P601	Al/Mn	P616	Cr/Fe/Ni	P631	Fe/Ni	P645	Sn/Ag
P602	Al/Sb	P617	Cr/Ni/Mo	P632	Fe/Ni/Mn	P646	Te/Pb
P603	Al/Si	P619	Cu/Cd	P633	Hg/Ag	P647	Tl/Ag
P604	B/Ag	P620	Cu/Cr/As	P634	In/P/Ag	P648	Zn/Ag
P605	Al/Si/Fe	P621	Cu/Fe	P635	K/Ni	P649	Cd/Pb/Ag
P606	Ca/Mg/Al	P622	Cu/Fe/Mn/Ni	P636	Mn/Ni	P650	Cu/Fe/Ag
P607	Ca/Mg/Cu/Zn	P623	Cu/Fe/Cr/Zn	P637	Na/K/Ni	P651	Cr/Ni
P608	Ca/Mg/Fe	P624	Cu/Fe/Mn/Zn	P638	Ni/Mn/Cr/Cu	P653	Cr/Fe/Mn/Mo
P609	Cd/Ag	P625	Cu/Mn	P639	Pb/As	P654	W/Ag
P610	Cd/Mn/Cr/Co	P626	Cu/Mn/Zn	P640	Rh/Ag	P655	Ti/Ag
P612	Co/Mn	P627	Cu/Ni	P641	Cu/Co	P656	Cd/Zn/Cu
P613	Cr/Co/Fe/Mn/Mo	P628	Cu/Ni/Ag	P642	Se/Sn	P657	Cr/Ni/Al
P614	Cr/Fe	P629	Cu/Zn/Fe	P643	Si/Ag	P659	Pd/Au
P615	Cr/Fe/Mn	P630	Fe/Mn	P644	Si/Mo	P660	Cu/Fe/Ni

Photron Warranty

All Photron hollow cathode lamps and the Super Lamp^{pat.} are warranted to be free of material and manufacturing defects when operated at the correct current for each instrument detailed on the lamp operating data sheet supplied for each element.

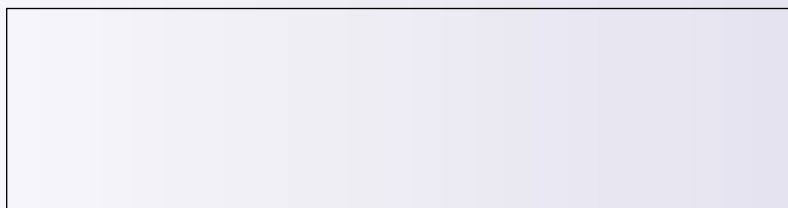
The operational lifetime of all of the above is rated at 5000mA hrs based on the currents specified in the data sheet, e.g. lamp run at 10mA last 500Hrs.

The use of currents higher than specified particularly on instruments where high peak currents are used, will shorten the life of some elements. Those affected either have a high vapour pressure (Hg As Se) or high sputtering rate (Au Cd Zn).

Warranty claims regarding lamp failure will be considered up to 2 years from date of purchase.

Warranty claims must accompany a completed warranty card. If a free replacement lamp is supplied the validity of guarantee shall date from shipment of the first lamp.

The shelf life of unused lamps are warranted for 5 years from the original purchase, any hollow cathode lamp found faulty before any use will be replaced.



PHOTRON PTY. LTD. A.C.N. 005 932 016

Unit 5, 3 Vesper Drive, Narre Warren

Victoria 3805, Australia

Phone: (61-3) 9704 9944, Fax: (61-3) 9704 6289

Web site: www.photron.com.au

Email: sales@photron.com.au / service@photron.com.au

Purchase online: www.AALAMPS.com