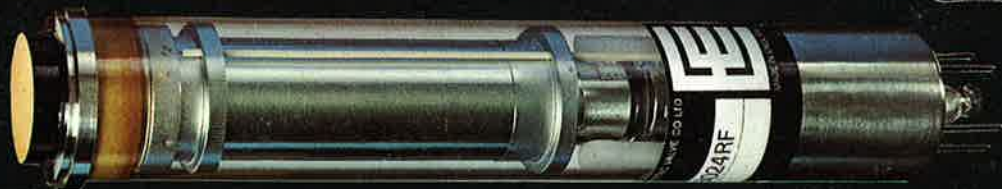


Leddicons



ENGLISH
ELECTRIC
VALVE
CO LTD



EEV Leddicons

The Leddicon[®], EEV's lead-oxide photoconductive camera tube is now used worldwide in all countries operating a colour television service and is the accepted standard for Broadcasting, Medical and Industrial applications where high resolution, high sensitivity and low lag pictures are required.

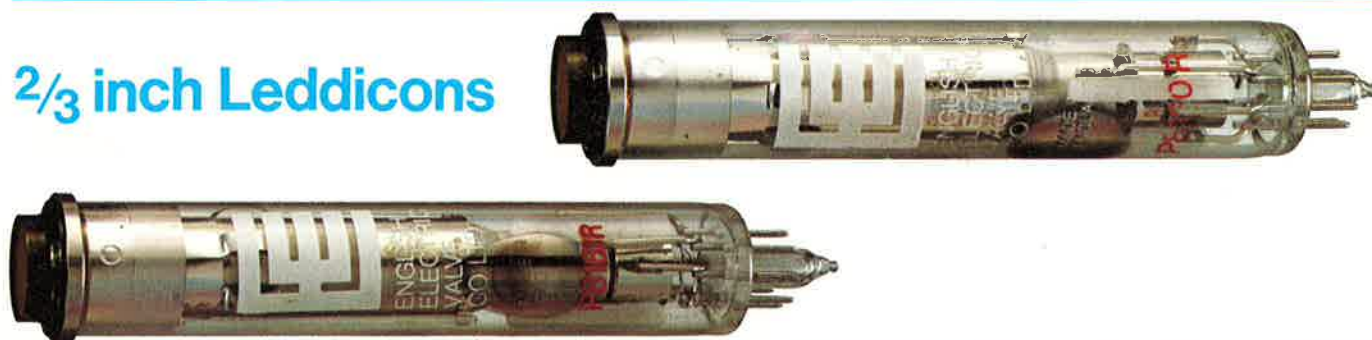
Continuous research and development ensures that Leddicon technology is always state-of-the-art and to date has already yielded significant benefits including:—

- * High resolution photolayers
- * Anti-microphonic construction
- * Anti-pick-up coaxial construction
- * Precisely controlled photolayer spectral response
- * Longer life
- * Integral rear light bias (preset, fixed or variable)
- * Matched tubes

This brochure briefly describes the comprehensive range of Leddicons available and tabulates recommended types for all known colour cameras and applications. An Equivalents Index is included. Data sheets giving details of operating conditions, characteristics and dimensional outlines etc. are available on request.

Since its inception in 1969, over 30,000 Leddicons have been supplied and the Leddicon is approved by all major broadcasting organisations and equipment manufacturers. Constant liaison with customers maintains the traditionally high level of service which has become synonymous with the name of EEV in the world of Professional Electron Tubes.

2/3 inch Leddicons



FEATURES

- * Specifically designed for use in ENG and EFP cameras
- * Low lag electron gun
- * High resolution and extended red photolayers
- * Precision electron gun for optimum geometry performance
- * Computer matched sets available.

Application	Tube Type	Photolayer
Broadcast Monochrome Cameras	P8160	High resolution
Broadcast Colour Cameras — Luminance channel	P8160L	High resolution
Blue channel	P8160B	High resolution
Green channel	P8160G	High resolution
Red channel	P8160R	High resolution and Extended red
Industrial Monochrome Cameras	P8161	High resolution
Industrial Colour Cameras — Luminance channel	P8161L	High resolution
Blue channel	P8161B	High resolution
Green channel	P8161G	High resolution
Red channel	P8161R	High resolution and Extended red

25mm Leddicons



Standard Types

for insertion into front of camera yoke

FEATURES

- * High resolution and extended red photolayers
- * Rear light bias facility

Application	Type of Photolayer					
	High resolution		Extended red			
			Without I.R. filter		With I.R. filter	
	Non light bias	Variable light bias	Non light bias	Variable light bias	Non light bias	Variable light bias
Monochrome camera	P8021	P8022	—	—	—	—
Colour camera — Luminance channel	P8021L	P8022L	—	—	—	—
— Blue channel	P8021B	P8022B	—	—	—	—
— Green channel	P8021G	P8022G	—	—	—	—
— Red channel	P8021R	P8022R	P8023AR	P8024AR	P8023RF	P8024RF

Standard Types

for insertion into rear of camera yoke

Application	Type of Photolayer					
	High resolution		Extended red			
			Without I.R. filter		With I.R. filter	
	Non light bias	Variable light bias	Non light bias	Variable light bias	Non light bias	Variable light bias
Monochrome camera	P8141	P8142	—	—	—	—
Colour camera — Luminance channel	P8141L	P8142L	—	—	—	—
— Blue channel	P8141B	P8142B	—	—	—	—
— Green channel	P8141G	P8142G	—	—	—	—
— Red channel	P8141R	P8142R	P8143AR	P8144AR	P8143RF	P8144RF

* H.O.P. = Highlight Overload Protection
 A.C.T. = Anti Comet Tail

H.O.P.* (A.C.T.) Types

Front and rear loading versions

25mm Leddicons

FEATURES

- * Long life H.O.P. precision electron gun
- * High resolution and extended red photolayers
- * Low power 95 mA filament

Application	Type of Photolayer					
	High resolution		Extended red			
			Without I.R. filter		With I.R. filter	
	Rear loading	Front loading	Rear loading	Front loading	Rear loading	Front loading
Monochrome cameras	P8145	P8025	—	—	—	—
Colour camera — Luminance channel	P8145L	P8025L	—	—	—	—
— Blue channel	P8145B	P8025B	—	—	—	—
— Green channel	P8145G	P8025G	—	—	—	—
— Red channel	P8145R	P8025R	P8146AR	P8026AR	P8146RF	P8026RF

Developmental Types

FEATURES

- * Long life H.O.P. precision electron gun with
- * Ultra high resolution and extended red photolayers

Application	Type of photolayer		
	High Resolution	Extended Red	
		without IR filter	with IR filter
Monochrome cameras	P8147	—	—
Colour cameras — luminance channel	P8147L	—	—
— blue channel	P8147B	—	—
— green channel	P8147G	—	—
— red channel	P8147R	P8148AR	P8148RF

FEATURES

- * Ultra high resolution photolayers
- * Diode electron gun
- * Rear light bias facility

Application	Type of photolayer		
	High Resolution	Extended Red	
		without IR filter	with IR filter
Monochrome cameras	P8190	—	—
Colour cameras — luminance channel	P8190L	—	—
— blue channel	P8190B	—	—
— green channel	P8190G	—	—
— red channel	P8190R	P8191AR	P8191RF

30mm Leddicons



Standard Types

- FEATURES**
- * Patented fixed integral rear light bias system
 - * High resolution photolayers
 - * Anti-microphonic mesh assembly
 - * Coaxial grid 3-grid 4 assembly for minimal 'ringing'
 - * Fit standard sockets

Application	Type of Photolayer							
	High resolution		Standard		Extended red			
					Without I.R. filter		With I.R. filter	
	Fixed Light bias	Variable Light bias	Fixed Light bias	Variable Light bias	Fixed Light bias	Variable Light bias	Fixed Light bias	Variable Light bias
Monochrome cameras	P8130H	P8131H	P8130	P8131	—	—	—	—
Colour camera — Luminance channel	P8130HL	P8131HL	P8130L	P8131L	—	—	—	—
— Blue channel	—	—	P8130B	P8131B	—	—	—	—
— Green channel	P8130HG	P8131HG	P8130G	P8131G	—	—	—	—
— Red channel	P8130HR	P8131HR	P8130R	P8131R	P8132AR	P8133AR	P8132RF	P8133RF

Advanced Types

featuring variable light bias for use in standard sockets

- FEATURES**
- * Integral light bias potentiometer and calibrated scale
 - * High resolution photolayers
 - * Anti-microphonic mesh assembly
 - * Coaxial grid 3-grid 4 assembly for minimal 'ringing'
 - * Fits standard sockets

Application	Type of Photolayer					
	High resolution		Standard			
			Extended red			
		Without I.R. filter		With I.R. filter		
Monochrome cameras	P8400H		P8400		—	—
Colour cameras — Luminance channel	P8400HL		P8400L		—	—
— Blue channel	—		P8400B		—	—
— Green channel	P8400HG		P8400G		—	—
— Red channel	P8400HR		P8400R		P8401AR	P8401RF

H.O.P.* (A.C.T.) Types

30mm Leddicons

for cameras with H.O.P. (A.C.T.) sockets and suitable circuitry.
(for details see individual data sheets)

FEATURES

- * H.O.P. (A.C.T.) precision electron gun
- * Fixed or variable integral light bias
- * Anti-microphonic mesh assembly

Application	Type of Photolayer							
	High resolution		Standard		Extended red			
					Without I.R. filter		With I.R. filter	
	Fixed light bias	Variable light bias	Fixed light bias	Variable light bias	Fixed light bias	Variable light bias	Fixed light bias	Variable light bias
Monochrome camera	P8136H	P8135H	P8136	P8135	—	—	—	—
Colour camera — Luminance channel	P8136HL	P8135HL	P8136L	P8135L	—	—	—	—
— Blue channel	—	—	P8136B	P8135B	—	—	—	—
— Green channel	P8136HG	P8135HG	P8136G	P8135G	—	—	—	—
— Red channel	P8136HR	P8135HR	P8136R	P8135R	P8138AR	P8137AR	P8138RF	P8137RF

* H.O.P. = Highlight Overload Protection
A.C.T. = Anti Comet Tail

Developmental Types

FEATURES

- * Low capacitance target contact for increased signal to noise ratio.
- * 1 inch scan format for improved geometry and registration
- * Anti-microphonic mesh assembly
- * Variable Integral rear light bias controlled by integral potentiometer and set to calibrated scale.
- * Ultra high resolution photolayers

Application	Type of photolayer		
	High resolution	Extended Red	
		without IR filter	with IR filter
Colour cameras — luminance channel	P8430HL	—	—
— blue channel	P8430B	—	—
— green channel	P8430HG	—	—
— red channel	P8430HR	P8431AR	P8431RF

Colour Cameras — Recommended Leddicons

MANUFACTURER	MODEL	LEDDICON TYPE RECOMMENDED			
		Luminance channel	Green channel	Blue channel	Red channel
AMPEX CORPORATION	BC230, BC230B BC300 BCC1, BCC2, BCC3 BCC10 BCC14	— P8130H or P8400H — — —	P8022G — P8022G P8025G P8160G	P8022B — P8022B P8025B P8160B	P8024AR — P8024AR P8026AR P8160R
ASACA	ACC — 2000	—	P8160G	P8160B	P8160R
BOSCH	KC4 P40 KCK40 KCN TCP40A KCP40, KCR40 KCS40 KCU40 TXK91 AC3 PK494 OMY40 KCA90	P8130HL or P8400HL P8130HL or P8400HL P8022L P8022L P8022L P8130HL or P8400HL P8130HL or P8400HL P8022 P8130HL or P8400HL P8022L —	P8130G or P8400G — — — — — — — — — — P8160G	P8130B or P8400B P8130B or P8400B P8022B P8022B P8022B P8130B or P8400B P8130B or P8400B — P8130B or P8400B P8022B P8160B	P8132RF or P8401RF P8132RF or P8401RF P8024RF P8024RF P8024RF P8132RF or P8401RF P8132RF or P8401RF — P8132RF or P8401RF P8024RF P8160R
CEI	CEI280 CEI287 CEI290 CEI435 MEDICAM CEI310 CEI330	— — — — — — —	P8022G P8022G P8022G P8022G P8022G P8160G P8160G	P8022B P8022B P8022B P8022B P8022B P8160B P8160B	P8024AR P8024AR P8024AR P8024AR P8024AR P8160R P8160R
CINEMA PRODUCTS	MNC-710CP MNC-71CP	— —	P8160G P8160G	P8160B P8160B	P8160R P8160R
COHU	1230E 1230F	— —	— —	— —	P8024AR (I.G.) P8024AR (I.G.)
EDITEL	MKIII ENC1	— —	P8022G P8022G	P8022B P8022B	P8024AR P8024AR
EMI Ltd.	2001 2002/IT 2004Z 2004/IZ 2005 2008	P8130HL or P8400HL P8130HL or P8400HL P8130H or P8400H P8022 — —	P8130HG or P8400HG P8130HG or P8400HG — — — P8130HG or P8400HG P8160G	P8130B or P8400B P8130HG or P8400B — — — P8130B or P8400B P8160B	P8130R or P8400R P8130R or P8400R — — — P8132AR or P8401AR P8160R
HARRIS (GATES) CORPORATION	PE250 (integral mesh) PE250 (Separate mesh) PE350 PE400 TC50 TC80 TE201, TE202 TE301, TE310	P8000L P8130HL or P8400HL P8130HL or P8400HL P8130HL or P8400HL — — — —	P8000G P8130G or P8400G P8130G or P8400G P8130G or P8400G P8022G P8022G P8022G P8022G	P8000B P8130B or P8400B P8130B or P8400B P8130B or P8400B P8022B P8022B P8022B P8022B	P8000R P8132RF or P8401RF P8132RF or P8401RF P8132RF or P8401RF P8024AR P8024AR P8024AR P8024AR
HITACHI	FP20, FP1020 FP1200 FP1212U, FP1212 FP3060 SK70, SK90, SK96 SK100 PMZ12 & PMZ12C-3	— — — — — — —	P8160G P8022G P8022G P8022G P8160G P8022G P8022G P8130HG or P8400H	P8160B P8022B P8022B P8022B P8160B P8022B P8022B P8130B or P8400B	P8160R P8024AR P8024RF P8022R P8160R P8401RF P8132RF or P8401RF
IKEGAMI	HL33, HL51, HL53 HL77, HL78, HL79A HL310 HK357, HL357A HK312, HL351 ITC230, ITC240 ITC300	— — — — — — —	P8022G P8160G P8022G P8022G or P8145G P8130HG or P8400HG P8160G P8022G	P8022B P8160B P8022B P8022B or P8145B P8130B or P8400B P8160B P8022B	P8024RF P8160R P8024RF P8024RF or P8146RF P8132RF or P8401RF P8160R P8024RF
IVC	150, 151 300A, 301 500, 500A 7000 & 7000P	— — — —	P8022G P8022G P8022G P8022G	P8022B P8022B P8022B P8022B	P8024AR P8024AR P8024AR P8024AR
JVC	CY8800U	—	P8160G	P8160B	P8160R

MANUFACTURER	MODEL	LEDDICON TYPE RECOMMENDED			
		Luminance channel	Green channel	Blue channel	Red channel
LINK ELECTRONICS	103	P8021 (25 mm) or P8130H (30 mm)	—	—	—
	104	P8130 or P8130H	—	—	—
	109	P8022	—	—	—
	110	—	P8145G	P8145B	P8146AR
MARCONI	MKV I(B3124)	P8130H or P8130	—	—	—
	MKV II(B3205) (Integral mesh)	P8000L	P8000G	P8000B	P8000R
	MKV IIB(B3205) (Separate mesh)	P8130HL	P8130G	P8130B	P8130R or P8132RF
	MKV II(B3215)	—	P8130HG or P8130G	P8130B	P8130R or P8132RF
	B3404 Telecine	P8130HL (Preview)	P8130HG(T)	P8130B(T)	P8130R(T)
	MKV IIP B3205	—	P8022G	P8022B	P8022R
MKIX (30 mm)	—	P8130HG	P8130B	P8130R or P8132RF	
MKIX Portable (25 mm)	—	P8145G	P8145B	P8146RF	
NEC	CTC520	—	P8022G	P8022B	P8024RF
	NC30	—	P8022G	P8022B	P8024RF
NORELCO	PC60 (Integral mesh)	—	P8000G	P8000B	P8000R
	PC70 (Separate mesh PC60)	—	P8400HG	P8400B	P8401RF
	PC72	—	P8400HG	P8400B	P8401RF
	PCP90B	—	P8022G	P8022B	P8024RF
	PC100, PC100A	—	P8145G	P8145B	P8146RF or P8145R
PANASONIC	AK750	—	P8160G	P8160B	P8160R
	AK900	—	P8022G	P8022B	P8024RF
	AK920	—	P8022G	P8022B	P8024RF
PHILIPS & PYE T.V.T.	EL85-21	—	P8130HG or P8400HG	P8130B or P8400B	P8130R or P8400R
	LDK2, LDK2/10	—	P8022G	P8022B	P8024RF
	LDK3, LDK35	—	P8130HG or P8400HG	P8130B or P8400B	P8132RF or P8401RF
	LDK5	—	P8145G	P8145B	P8146RF or P8145R
	LDK11, LDK14	—	P8160G	P8160B	P8160R
	LDK15, LDK25	—	P8145G	P8145B	P8146RF or P8145R
	LDK33 & 33S	—	P8130HG or P8400HG	P8130B or P8400B	P8132RF or P8401RF
	LDK63	—	P8130HG or P8400HG	P8130B or P8400B	P8130R, P8132RF or P8401RF
	LDK65	—	P8145HG	P8145B	P8146RF or P8145R
	PCP90	—	P8022G	P8022B	P8024RF
	LDH1, LDH1/01	—	P8022G	P8022B	P8024RF
	LDH1/51, LDH16	—	P8022G	P8022B	P8024RF
	LDH20	—	P8022G	P8022B	P8024RF
	VIDEO 80	—	P8160G	P8160B	P8160R
R.C.A.	TK44A, TK44B	—	P8130HG or P8400HG	P8130B or P8400B	P8132AR or P8401AR
	TK45A, TK45B	—	P8130HG or P8400HG	P8130B or P8400B	P8132AR or P8401AR
	TK46	—	P8130HG or P8400HG	P8130B or P8400B	P8132AR or P8401AR
	TK47	—	P8130HG or P8400HG	P8130B or P8400B	P8132RF or P8401RF
	TK630	—	P8022G	P8022B	P8024RF
	TK760	—	P8160G	P8160B	P8160R
	TK76, TK76B	—	P8160G	P8160B	P8160R
	TKP45A	—	P8022G	P8022B	P8024AR
	TKP46	—	P8022G	P8022G	P8024AR
SONY	BVP300	—	P8160G	P8160B	P8160R
TESLA	TKP305	—	P8130HG	P8130B	P8132RF
THOMSON CSF	MC601, MC602	—	P8160G	P8160B	P8160R
	TAV1650	—	P8160G	P8160B	P8160R
	TTV1515C & M	—	P8130HG	P8130B	P8132RF
	TTV1515S	—	P8130HG or P8131HG	P8130B or P8131B	P8132RF or P8133RF
	TTV1550	—	P8022G	P8022B	P8024RF
	TTV2600	—	P8022G	P8022B	P8024RF
	THV14	—	P8022G	P8022B	P8024RF
	TTV1100	P8022	—	—	—
TTV1516	—	P8022G	P8022B	P8024RF	
TOSHIBA	PK-31	—	P8130HG or P8400HG	P8130B or P8400B	P8132RF or P8401RF
	PK-32	—	P8022G	P8022B	P8024RF
	PK-39	—	P8160G	P8160B	P8160R
USSR	KT116M	P8130HL	P8130G or P8130HG	P8130B	P8132RF
	KT132	—	P8130G	P8130B	P8132RF
VISUAL	VP3	—	P8130HG or P8400HG	P8130B or P8400B	P8132AR or P8401AR

Equivalents Index

This index lists tubes of other manufacturers for which specific Leddicons are recommended as replacements

30mm tubes

Type to be replaced	Leddicon replacement	Note
4591	P8000	1
4816	P8130X	2
	P8400X	7
4817	P8130X	2
	P8400X	7
55875	P8000	1
55875I.G.	P8000I.G.	1
55876 OI	P8000X	1
55876X	P8000X	1
BC4392	P8400	7
	P8130	2
	P8131	4
BC4393	P8401AR	7
	P8132AR	2
	P8133AR	4
BC4394	P8401RF	7
	P8132RF	2
	P8133RF	4
BC4592	P8400	7
	P8130	2
	P8131	4
BC4593	P8401AR	7
	P8132AR	2
	P8133AR	4
BC4594	P8401RF	7
	P8132RF	2
	P8133RF	4
BC4992	P8400	7
	P8130	2
	P8131	4
BC4993	P8401AR	7
	P8132AR	2
	P8133AR	4
BC4994	P8401RF	7
	P8132RF	2
	P8133RF	4
P8000	P8000	1
P8001	P8400	3,7
	P8130	3,2
P8003	P8401	3,7
	P8132	3,2
P8005	P8131	1
P8007	P8133	1
P8008	P8136	1
XQ1020	P8400	7
	P8130	2
	P8131	4
XQ1021	P8400I.G.	7
	P8130I.G.	2

Type to be replaced	Leddicon replacement	Note
XQ1022	P8400X	7
	P8130X	2
XQ1023	P8401AR	7
	P8132AR	2
XQ1024	P8401AR I.G.	7
	P8132AR I.G.	2
XQ1025	P8401RF	7
	P8132RF	2
XQ1026	P8401RF I.G.	7
	P8132RF I.G.	2
XQ1410(fixed bias)	P8400	6
	P8130	6
XQ1410(variable bias)	P8400	1
	P8131	4
XQ1413(fixed bias)	P8401AR	6
	P8132AR	6
XQ1413(variable bias)	P8401AR	1
	P8133AR	4
XQ1415(fixed bias)	P8401RF	6,7
	P8132RF	6,2
XQ1415(variable bias)	P8401RF	1
	P8133RF	4
XQ1411(fixed bias)	P8400I.G.	6,7
	P8130I.G.	6,2
XQ1411(variable bias)	P8400I.G.	1
	P8131I.G.	4
XQ1414(fixed bias)	P8401AR I.G.	6,7
	P8132AR I.G.	6,2
XQ1414(variable bias)	P8401AR I.G.	1
	P8133AR I.G.	4
XQ1416(fixed bias)	P8401RF I.G.	6,7
	P8132RF I.G.	6,2
XQ1416(variable bias)	P8401RF I.G.	1
	P8133RF I.G.	4
XQ1520(fixed bias)	P8136	1
	P8135	4
XQ1521(fixed bias)	P8136I.G.	1
	P8135I.G.	4
XQ1523(fixed bias)	P8138AR	1
	P8137AR	4
XQ1524(fixed bias)	P8138AR I.G.	1
	P8137AR I.G.	4
XQ1525(fixed bias)	P8138RF	1
	P8137RF	4
XQ1526(fixed bias)	P8138RF I.G.	1
	P8137RF I.G.	4

25mm tubes

Type to be replaced	Leddicon replacement	Note
S73XQ	P8190	1
XQ1070	P8021	1
	P8022	5
XQ1071	P8021 I.G.	1
	P8022 I.G.	5
XQ1072	P8021X	1
	P8022X	5
XQ1073	P8023AR	1
	P8024AR	5
XQ1074	P8023AR I.G.	1
	P8024AR I.G.	5
XQ1075	P8023RF	1
	P8024RF	5
XQ1076	P8023RF I.G.	1
	P8024RF I.G.	5
XQ1070/02	P8141	1
	P8142	5
XQ1073/02	P8143AR	1
	P8144AR	5
XQ1075/02	P8143RF	1
	P8144RF	5
XQ1080	P8145	1
XQ1081	P8145 I.G.	1
XQ1083	P8146AR	1
XQ1084	P8146AR I.G.	1
XQ1085	P8146RF	1
XQ1086	P8146RF I.G.	1
XQ1090	P8025	1
XQ1091	P8025 I.G.	1
XQ1093	P8026AR	1
XQ1094	P8026AR I.G.	1
XQ1095	P8025RF	1
XQ1096	P8026RF I.G.	1
XQ1500	P8147	1
XQ1501	P8147 I.G.	1
XQ1503	P8148AR	1
XQ1504	P8148AR I.G.	1
XQ1505	P8148RF	1
XQ1506	P8148RF I.G.	1

17mm tubes

Type to be replaced	Leddicon replacement	Note
XQ1427	P8160	1
XQ1428	P8161	1

Notes

1. Direct plug-in replacement.
2. Direct plug-in replacement. Leddicon has fixed integral light bias.
3. Leddicon requires total 300 mA (and not 95 mA) for heater inclusive of light bias supply. No socket modification.
4. Leddicon replacement requires socket modification to give variable light bias control.
5. EEV type requires 5 V, 100 mA lamp bulb in tube socket for light bias working (supplied with tube).
6. Direct plug-in replacement after adaptor removed from socket.
7. Advanced type. Direct plug-in replacement. Features integral variable light bias potentiometer.
8. EEV type requires only 95 mA heater current and not 190 mA.

XQ Types denoted by /01 indicate that these tubes have no anti-halation faceplate stud. Leddicons of all types can be supplied without faceplate stud.

FOR FURTHER INFORMATION CONTACT YOUR LOCAL AGENT OR EEV AT THE ADDRESS BELOW



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