

## MICROWAVE TUBES SHORT-FORM CATALOG 1st Edition



## Traveling Wave Tubes for Earth Stations

Type Number	Frequency Range [GHz]	Output Power [W]	Power Gain [dB]	-1dB Bandwidth [MHz]	Body Voltage [kV]	Cathode Current [A]	Collector Voltage [kV]	Collector Current [A]	Anode Voltage [kV]	Heater Voltage [V]	Heater Current [A]	Cooling (a)	Focusing (b)	RF Connections Input/Output (c)	Weight [kg] (d)	Description
LD4415A	5.850~6.425	150	40	—	6.0	0.17	3.3/2.1	0.17	4.7	6.0	1.1	CD	PPM	COAX/WG	4	Helix type
LD4536A	5.850~6.425	400	41	—	8.0	0.38	4.5	0.38	5.7	6.0	3.0	FA	PPM	COAX/WG	7	Helix type
LD4475	5.850~6.425	3000	40	—	14.7	1.35	9.5	1.35	14.7	3.7	8.6	FA	PPM	COAX/WG	25	Helix type
LD-793B	5.925~6.425	8000	35	—	17.0	2.8	17.0	2.8	17.0	6.0	8.0	L/FA	EM	WG/WG	14	Coupled cavity type
LD4337C	5.850~6.425	12000	35	—	22.5	3.4	16.5	3.4	22.2	6.0	15.2	L/FA	EM	WG/WG	30	Coupled cavity type
LD4437	14.0~14.5	50	43	—	5.5	0.095	2.3	0.095	4.5	6.3	1.2	CD	PPM	COAX/WG	2	Helix type
LD4447	14.0~14.5	130	42	—	8.5	0.15	3.5	0.15	6.5	6.3	1.2	CD	PPM	COAX/WG	3	Helix type
LD4612	14.0~14.5	250	43	—	11.5	0.21	5.5	0.21	11.7	5.8	2.4	FA	PPM	COAX/WG	5	Helix type
LD7202	14.0~14.5	600	49	—	10.5	0.39	5.4	0.39	6.0	6.3	2.3	FA	PPM	COAX/WG	7.5	Helix type
LD4219A	14.0~14.5	1000	49	—	15.2	0.59	9.5	0.59	12.2	5.2	4.4	FA	PPM	WG/WG	15	Coupled cavity type
LD4346	14.0~14.5	3000	48	—	17.0	1.35	10.5	1.35	12.0	5.5	7.5	FA	EM	WG/WG	12	Coupled cavity type
LD4545	27.5~29.0	20	35	—	8.5	0.05	2.5	0.05	7.0	6.0	1.1	CD	PPM	WG/WG	3.5	Helix type

## Klystrons for Earth Stations

LD4542J/K/L	5.850~6.425	400	39	42	4.2	0.41	4.2	0.4	—	5.5	3.4	FA	PM	COAX/WG	23	0, 6, 10Ch preset
LD4423J/K/L/M	5.850~6.425	1700	41	42	7.2	0.62	7.2	0.61	—	4.6	6.1	FA	PM	COAX/WG	34	0, 6, 12, 14Ch preset
LD4396J/K/L/M	5.850~6.425	3400	45	46	9.0	0.9	9.0	0.89	—	4.7	6.5	FA	PM	COAX/WG	34	0, 6, 12, 14Ch preset
LD4578J/K	5.850~6.455	1700	41	42	7.0	0.62	7.0	0.61	—	4.7	6.2	FA	PM	COAX/WG	34	0, 6Ch preset
LD4579J/K	5.850~6.455	3400	45	46	9.0	0.9	9.0	0.89	—	4.6	6.1	FA	PM	COAX/WG	34	0, 6Ch preset
LD4595	14.0~14.5	3000	42	80	10.7	0.88	10.7	0.87	—	5.0	4.0	FA	PM	WG/WG	40	8Ch preset
LD4405	27.5~29.1	450	44	160	11.0	0.46	11.0	0.45	—	5.2	2.7	FA	PM	WG/WG	55	Electronic Ch control
LD4406	28.7~30.05	450	44	160	11.0	0.46	11.0	0.45	—	5.2	2.7	FA	PM	WG/WG	55	Electronic Ch control
LD4407	29.6~31.0	450	44	160	11.0	0.46	11.0	0.45	—	5.2	2.7	FA	PM	WG/WG	55	Electronic Ch control
LD4606A	27.5~29.1	350	41	100	9.0	0.34	9.0	0.33	—	4.3	2.5	FA	PM	WG/WG	38	High efficiency (CPD)

## Klystrons for Troposcatter Links

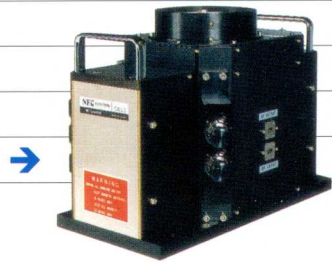
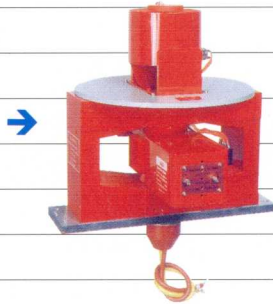
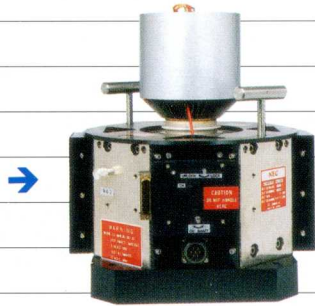
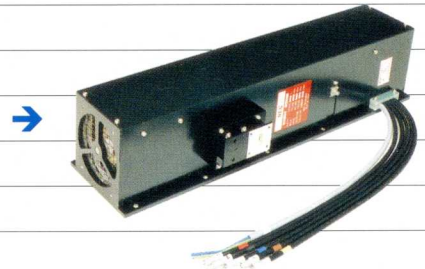
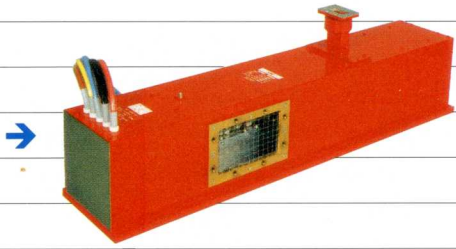
LD4404	1.429~1.525	1200	41	4(-3dB)	6.0	0.54	6.0	0.54	—	5.0	7.0	FA	PM	COAX/COAX	30	Small sized
LD4412	1.7~2.0	2200	39	8	8.0	0.78	8.0	0.78	—	5.0	7.0	FA	PM	COAX/COAX	37	Small sized
LD4218	1.7~2.0	12000	43	12	14.5	1.9	14.5	1.9	—	5.3	14.3	FA	EM	COAX/WG	70	—
LD4410	1.7~2.4	1200	41	8	6.0	0.54	6.0	0.54	—	6.0	8.0	FA	PM	COAX/COAX	33	Small sized
LD4413	2.0~2.4	2200	37	8	7.8	0.77	7.8	0.77	—	5.0	7.0	FA	PM	COAX/COAX	37	Small sized
LD4193	2.0~2.4	12000	43	12	13.0	1.78	13.0	1.78	—	5.3	14.3	FA	EM	COAX/WG	60	—
LD4411	2.4~2.7	1200	40	8	7.7	0.52	7.7	0.52	—	6.0	8.0	FA	PM	COAX/COAX	33	Small sized
LD4416	2.4~2.7	12000	43	12	14.0	1.7	14.0	1.7	—	5.3	14.3	FA	EM	COAX/WG	60	—

(a) CD : Conduction  
FA : Forced air  
L : Liquid

(b) EM : Electromagnet  
PM : Permanent magnet  
PPM : Periodic permanent magnet

(c) COAX : Coaxial  
WG : Waveguide

(d) Excluding electromagnet



**For Further Information Please Contact.**

**NEC Corporation**  
**International Maintenance Supplies Div.**  
7-1, Shiba 5 Chome, Minato-ku  
Tokyo 108-01, Japan  
Tlx: NECTOK J22686  
Fax: 03-798-6957  
Tel: 03-798-6043

**Inquiries on this document should be made  
referring to the following alpha-numerals.**

GA-1003  
August 1989

**NEC**

Cat. No. E71088  
90060302NM  
Printed in Japan

© **NEC Corporation 1989**

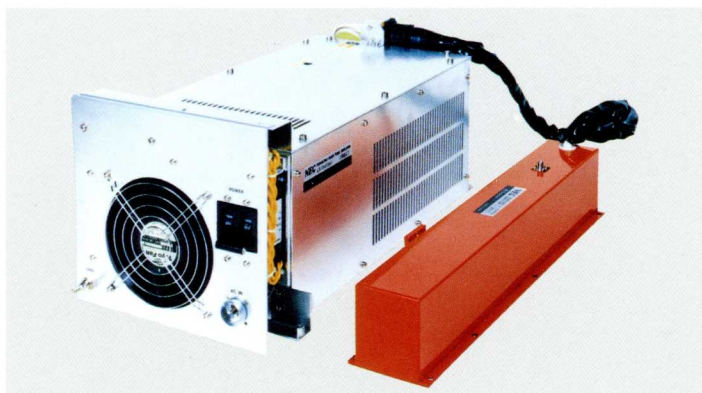
## INNOVATION AND RELIABILITY IN MICROWAVE TUBES

Since 1944, NEC has developed and continually improved various types of microwave tubes such as Klystrons, Travelling Wave Tubes, Cross Field Amplifiers and Gyrotrons.

These products have been acclaimed by NEC's customers for their stable, reliable operation and long life.

For MM'90 three new products have been introduced. These have been designed by the Microwave Tube Division and are now in production at NEC.

### 1. Ku-band 130 W TWTA



LD79U13A1 TWTA

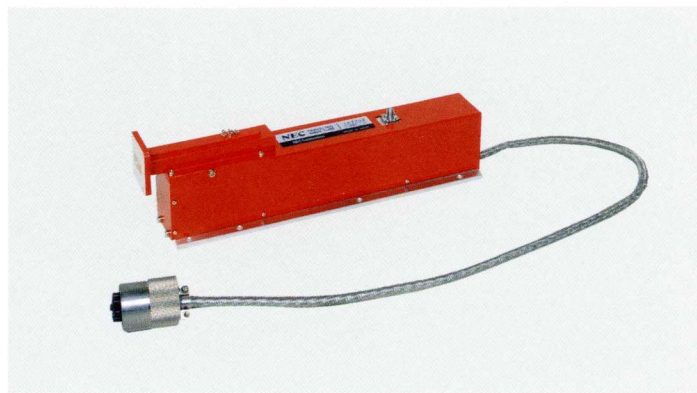
#### Features

- Long life TWT
- Reliable high voltage power supply
- Compact size and light weight

### 2. Ku-band 34 W TWT

#### Features

- High efficiency with 2-stage depressed collectors
- PPM focused
- Conduction cooling
- Compact and rugged construction



LD7702 TWT

### 3. Ka-band 100 W TWT



LD7200 TWT

#### Features

- Depressed 2-stage collectors for high efficiency
- Excellent beam transmission
- PPM focused
- Forced air cooled
- Rugged construction