

## HIGH POWER CW KLYSTRON FOR GROUND TERMINALS LD7126 SERIES

17 GHz BAND, 2.0 kW/2.4 kW, HIGH EFFICIENCY, HIGH POWER GAIN

### GENERAL DESCRIPTION

NEC LD7126 series are DBS Klystron Amplifiers which employ five cavities and are ideal for use in the earth-to-satellite communication systems.

NEC provides the 2.0 kW model (Frequency : 17.3 to 18.1 GHz, Bandwidth (-1dB) : 80 MHz) and the 2.4 kW model ( Frequency : 17.3 to 17.8 GHz, Bandwidth (-1dB) : 45 MHz ).

All tubes are forced-air-cooled at any power level. An automatic channel tuner, which changes the operating frequency very quickly and simply, is available in all the series.

Furthermore, they are of rugged and reliable design offering long-life service.

### FEATURES

- Compact and Light Weight (27 kg approx.)
- High Efficiency  
(The DC to RF conversion efficiency is typically 28 % or higher.)
- High Power Gain
- Long Life and High Stability
- Simple Cooling System (forced-air-cooled)
- Automatic Channel Tuner (8-12 Channels), Hand Tuner model is also available
- Permanent Magnet Focusing
- Rugged Construction



For safe use of microwave tubes, refer to NEC document "Safety instructions to all personnel handling electron tubes" (ET0048EJ\*V\*UM00)

The information in this document is subject to change without notice.

**GENERAL CHARACTERISTICS**

**ELECTRICAL**

Frequency .....	17.3 to 18.1 GHz / 17.3 to 17.8 GHz
Output Power .....	2.0 kW / 2.4 kW
Heater Voltage .....	6.6 V
Heater Current .....	3.3 A
Cathode Type .....	Indirectly Heated, Impregnated
Cathode Warm-up Time .....	300 s

**MECHANICAL**

Dimensions .....	See Outline
Weight .....	27 kg approx.
Focusing .....	Permanent Magnet
Mounting Position .....	Vertical (Cathode down)
Cooling .....	Forced Air
Electrical Connections .....	See Outline
RF Connections	
Input .....	Mates with UG-419/U Flange
Output .....	Mates with UG-419/U Flange
Cavity Tuning Method .....	8-12 Channel Preset Tuning (Hand Tuner is also available)

**ABSOLUTE RATINGS ( Note 1, 2 and 3 )**

ELECTRICAL	Min.	Max.	Unit
Heater Voltage .....	4.5	7.5	V
Heater Surge Current .....	-	7.0	A
Heater Current .....	-	4.5	A
Heater Warm-up Time .....	300	-	s
Body Voltage .....	-	10.4	kV
Body Current .....	-	30.0	mA
Collector Voltage .....	-	10.4	kV
Collector Current .....	-	1.1	A
Cathode Current .....	-	1.1	A
DC Input Power .....	-	11.44	kW
Load VSWR			
Normal Value .....	-	1.2 : 1	
Instantaneous Value .....	-	1.5 : 1	
<b>MECHANICAL</b>			
Collector Temperature .....	-	+250	°C
Cooling Air Temperature .....	-10	+50	°C
Collector Air Flow .....	650	-	kg/hr
Body Air Flow .....	200	-	kg/hr
Gun Air Flow .....	41	-	kg/hr
<b>MECHANICAL</b>			
Ambient Temperature			
Operating .....	+5	+50	°C
Storage .....	-50	+70	°C

**TYPICAL OPERATION (Note 3, 4 and 5)**

	2.0 kW	2.4 kW	Unit
Frequency .....	17.3 - 18.1	17.3 - 17.8	GHz
Heater Voltage (Note 4) .....	6.6	6.6	V
Heater Current .....	3.3	3.3	A
Body Voltage .....	9.8	9.8	kV
Body Current .....	10	10	mA
Collector Voltage .....	9.8	9.8	kV
Collector Current .....	0.9	0.9	A
Cathode Current .....	0.9	0.9	A
DC Input Power .....	8.82	8.82	kW
Driving Power .....	84	24	mW
Output Power .....	2.1	2.5	kW
Power Gain .....	44	50	dB
Band Width (-1 dB) .....	82	47	MHz
Collector Air Flow .....	660	660	kg/hr
Collector Air Pressure Drop .....	1225	1225	Pa
Body Air Flow .....	205	205	kg/hr
Body Air Pressure Drop .....	200	200	Pa
Gun Air Flow .....	43	43	kg/hr

**Note 1 :** Absolute rating should not be exceeded under continuous or transient conditions. A single absolute rating may be the limitation and simultaneous operation at more than one absolute rating may not be possible. Equipment design should limit voltage and environmental variations so that ratings will be exceeded.

**Note 2 :** The Klystron body should be at ground potential in operation.

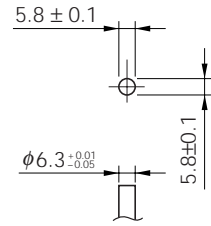
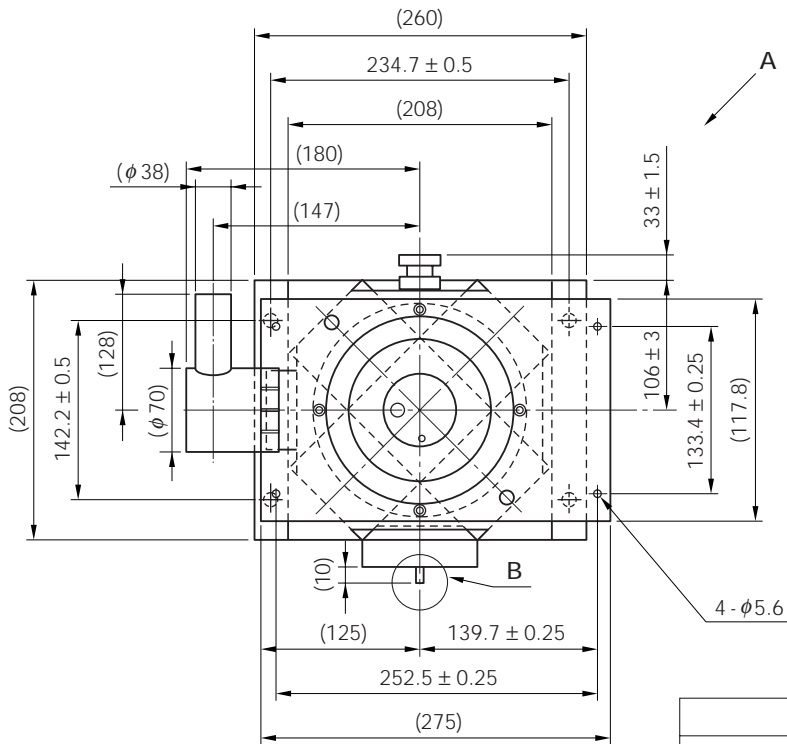
**Note 3 :** All voltages are referred to the cathode potential except the heater voltage.

**Note 4 :** The optimum operating value is shown on a test performance sheet for each tube.

**Note 5 :** Characteristics and operating values on this Data Sheet are based on performance test. These values may be changed as a result of additional information or product improvement. NEC should be consulted before using this information for equipment design. This data sheet should not be referred to a contractual specification.

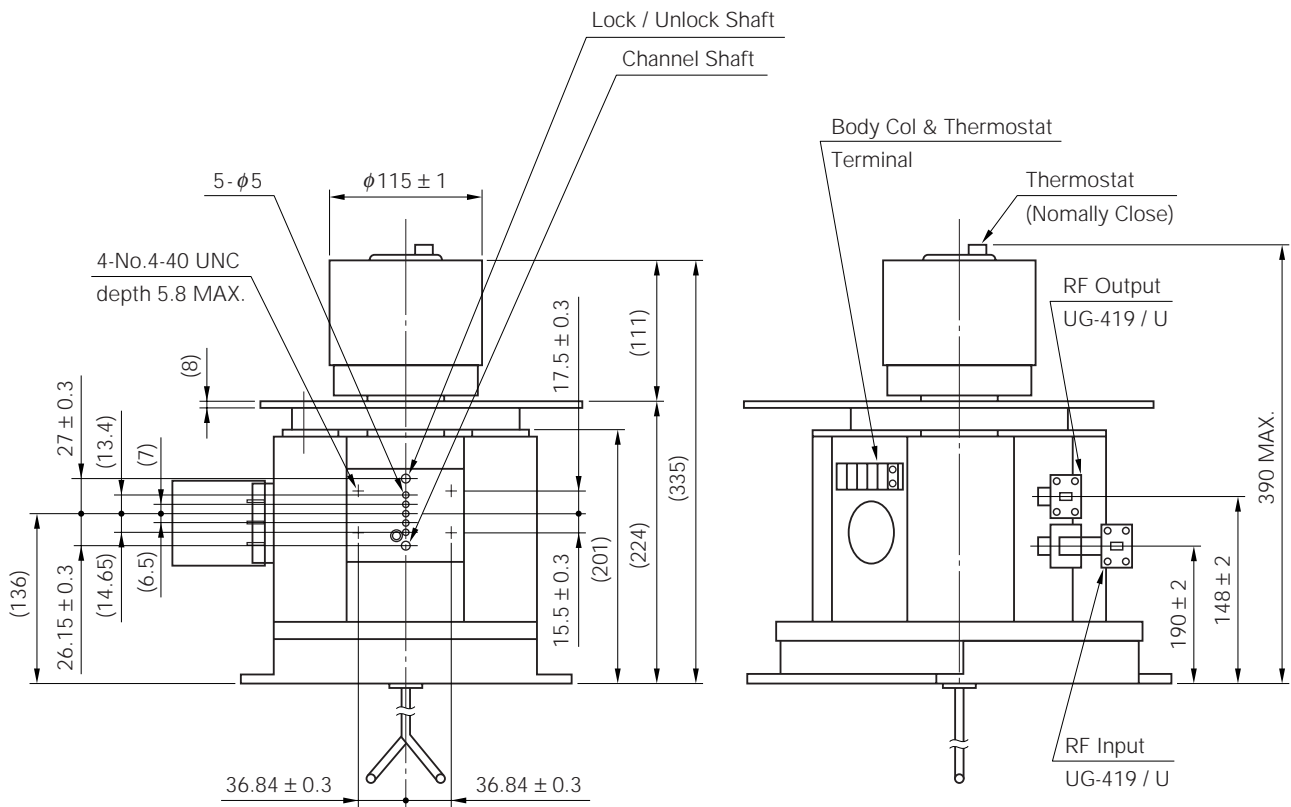
LD7126 SERIES OUTLINE (Unit in mm)

Preset Tuner Model



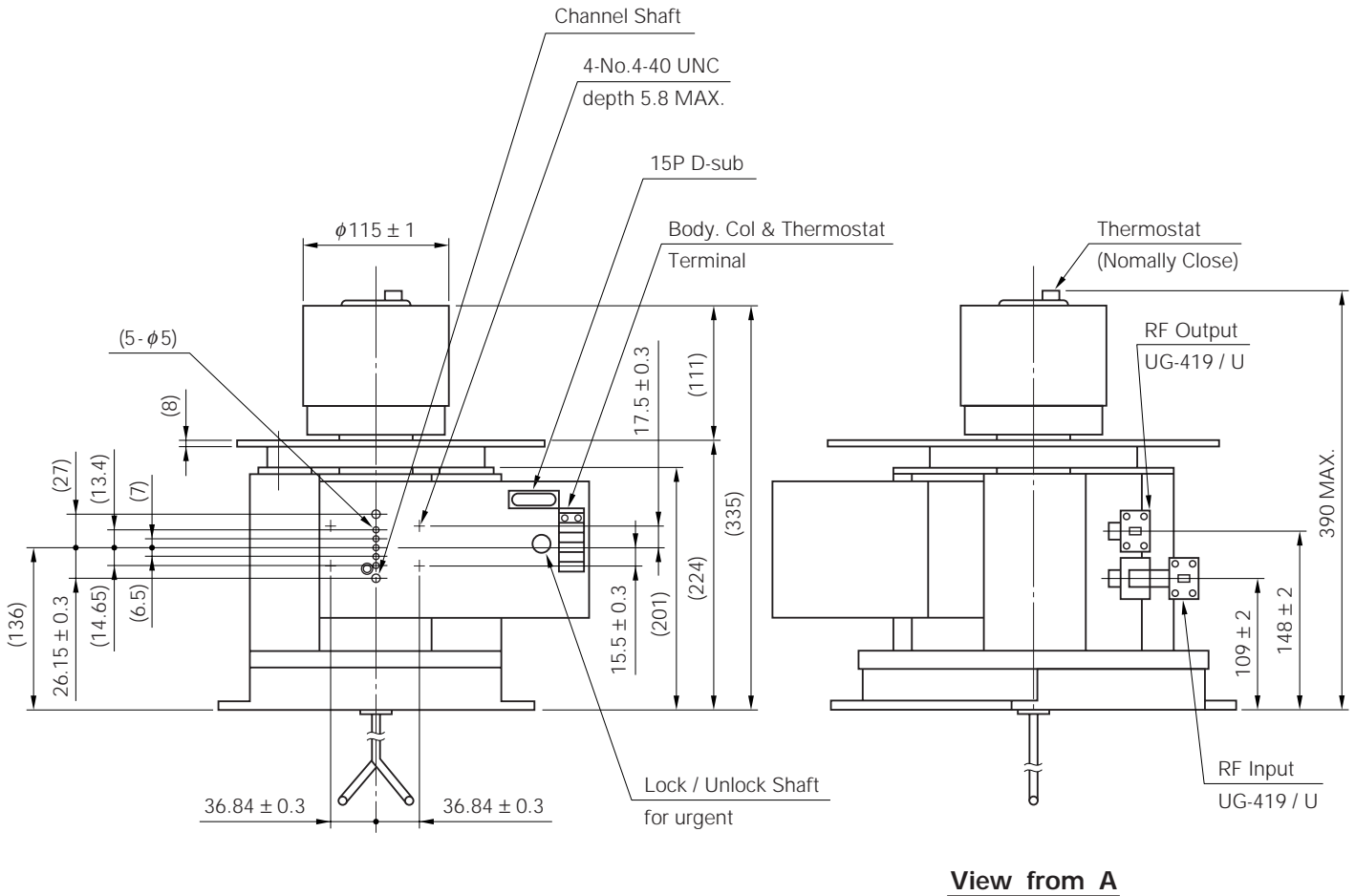
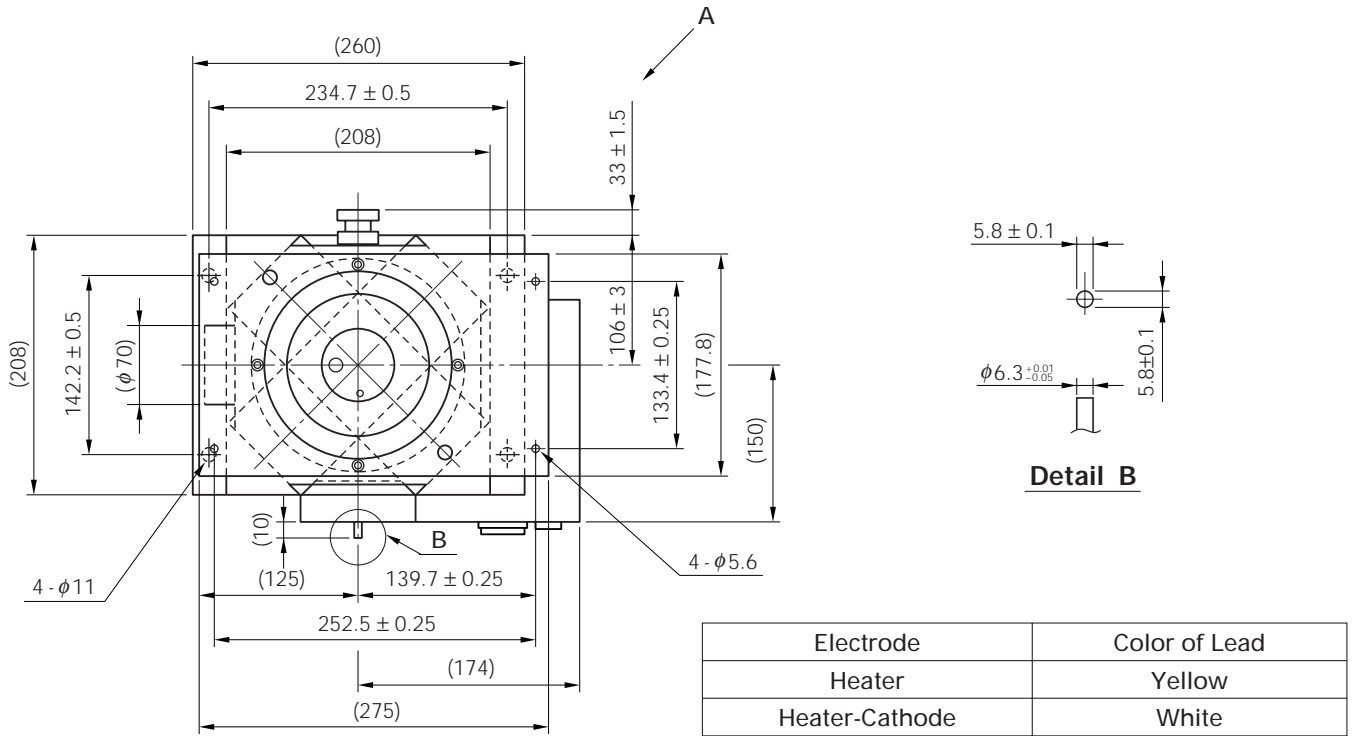
Detail B

Electrode	Color of Lead
Heater	Yellow
Heater-Cathode	White



View from A

**LD7126 SERIES OUTLINE (Unit in mm)**  
**Motor Driven Preset Tuner (Fast Tuning) Model**



**View from A**

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