

650nm Pulsation Red Laser Diode

Description

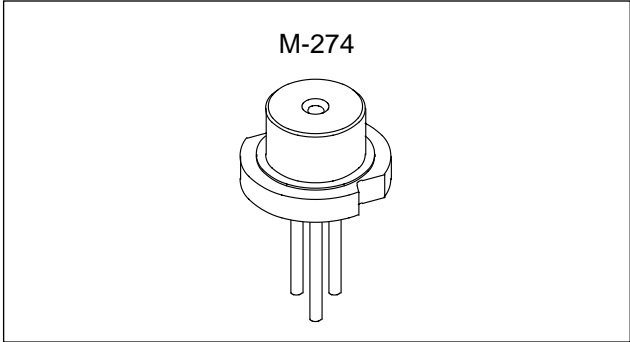
The SLD1134VL is a pulsation red laser diode designed for DVD systems.

Features

- Low noise
- Standard package (φ5.6mm)

Application

DVD



Structure

- AlGaInP quantum well-structure laser diode
- PIN photo diode for optical power output monitor

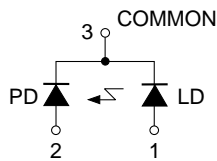
Recommended Optical Power Output

4mW

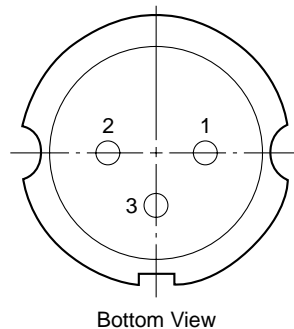
Absolute Maximum Ratings (Tc = 25°C)

- Optical power output Pomax 5 mW
- Reverse voltage VR LD 2 V
PD 20 V
- Operating temperature Topr -10 to +70 °C
- Storage temperature Tstg -40 to +85 °C

Connection Diagram



Pin Configuration



- 1. LD Anode
- 2. PD Anode
- 3. Common

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Electrical and Optical Characteristics

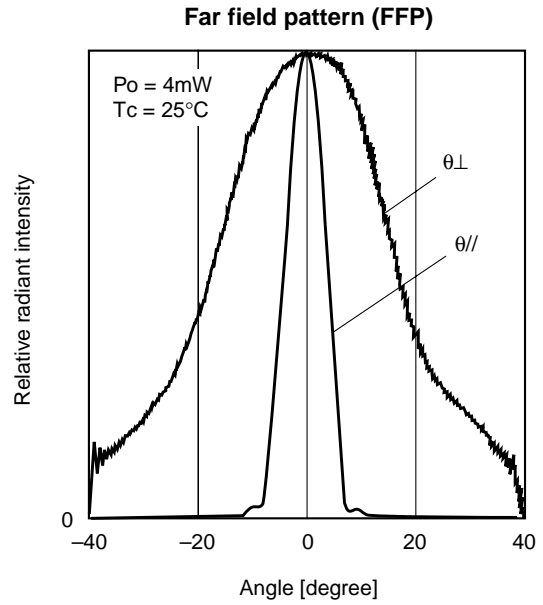
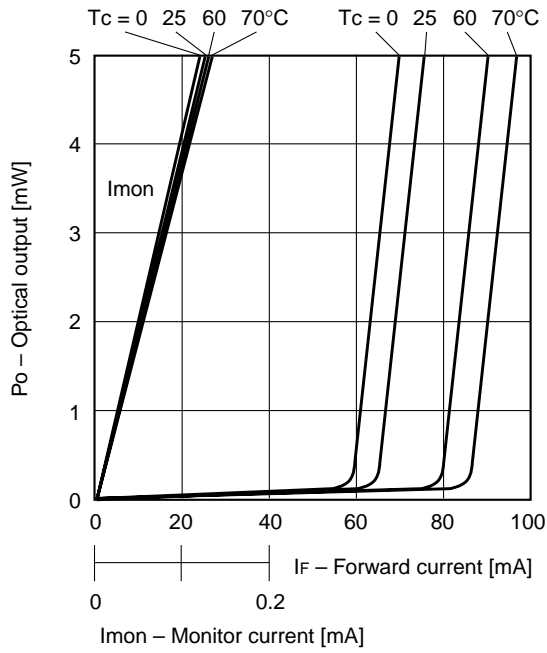
Tc: Case temperature

| Item | Symbol | Conditions | Min. | Typ. | Max. | Unit | |
|-------------------------|---------------------|---------------------------------|----------------------|-----------------|------|-------|--------|
| Threshold current | I _{th} | | | 65 | 80 | mA | |
| Operating current | I _{op1} | P _o = 4mW | | 75 | 90 | mA | |
| | I _{op2} *1 | | | | 120 | mA | |
| Operating voltage | V _{op} | P _o = 4mW | | 2.3 | 2.8 | V | |
| Wavelength | λ _p | P _o = 4mW | 640 | 655 | 660 | nm | |
| Radiation Angle | Perpendicular | θ _⊥ | P _o = 4mW | 25 | 35 | 40 | degree |
| | Parallel | | | θ _{//} | 7 | 8.5 | 12 |
| Positional accuracy | Position | ΔX, ΔY, ΔZ | P _o = 4mW | | | ±80 | μm |
| | Angle | Δφ _{//} | | | | ±2 | degree |
| | | Δφ _⊥ | | | | ±3 | degree |
| Differential efficiency | η _D | P _o = 4mW | 0.15 | 0.4 | 0.7 | mW/mA | |
| Astigmatism | A _s | P _o = 4mW | | 10 | | μm | |
| Monitor current | I _{mon} | P _o = 4mW VR = 5V | 0.05 | 0.1 | 0.25 | mA | |

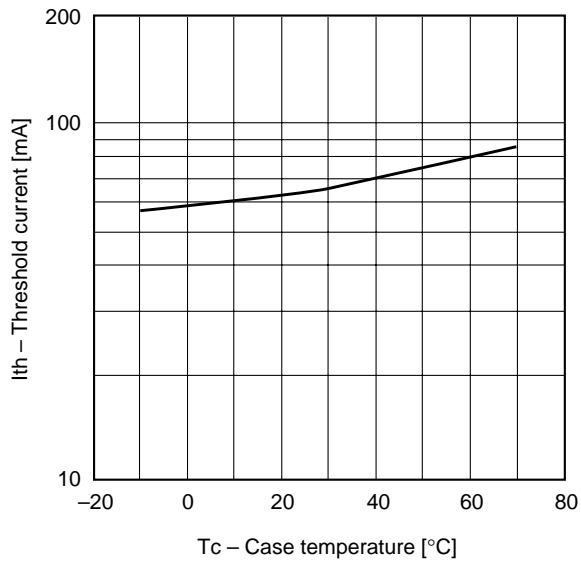
*1 T_c = 70°C

Example of Representative Characteristics

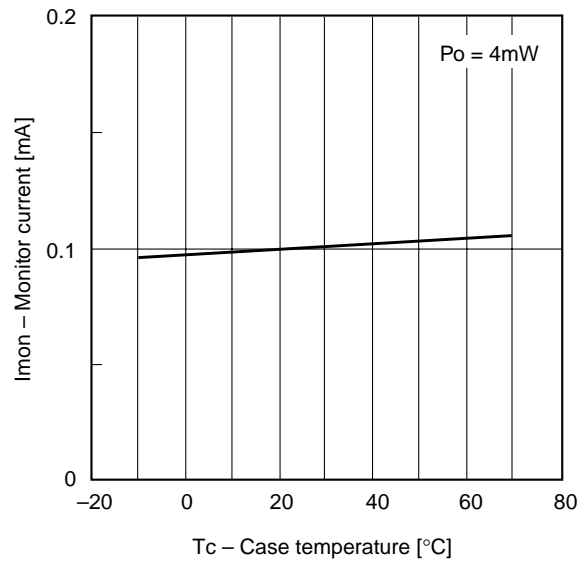
Optical power output vs. Forward current characteristics
 Optical power output vs. Monitor current characteristics



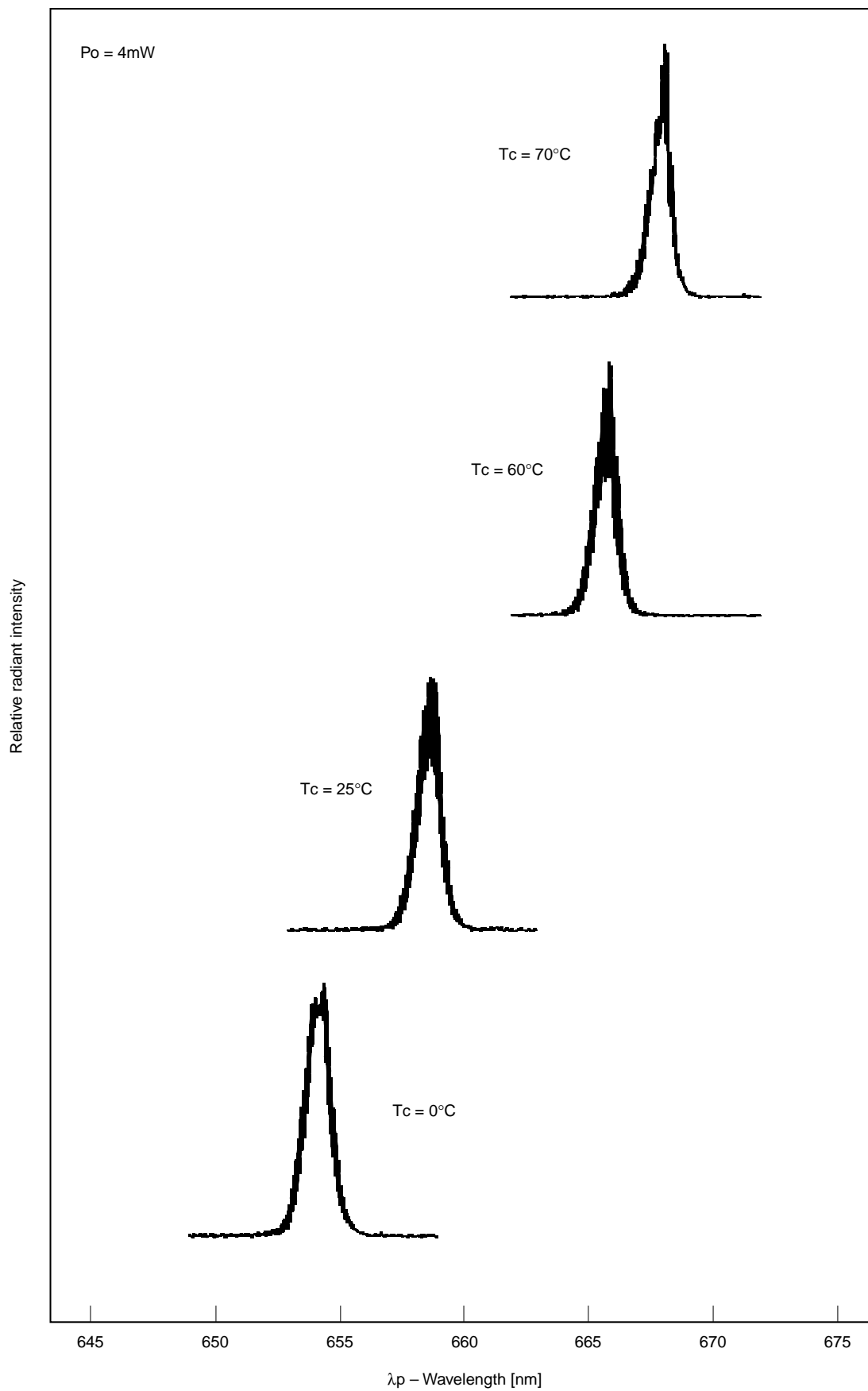
Threshold current vs. Temperature characteristics



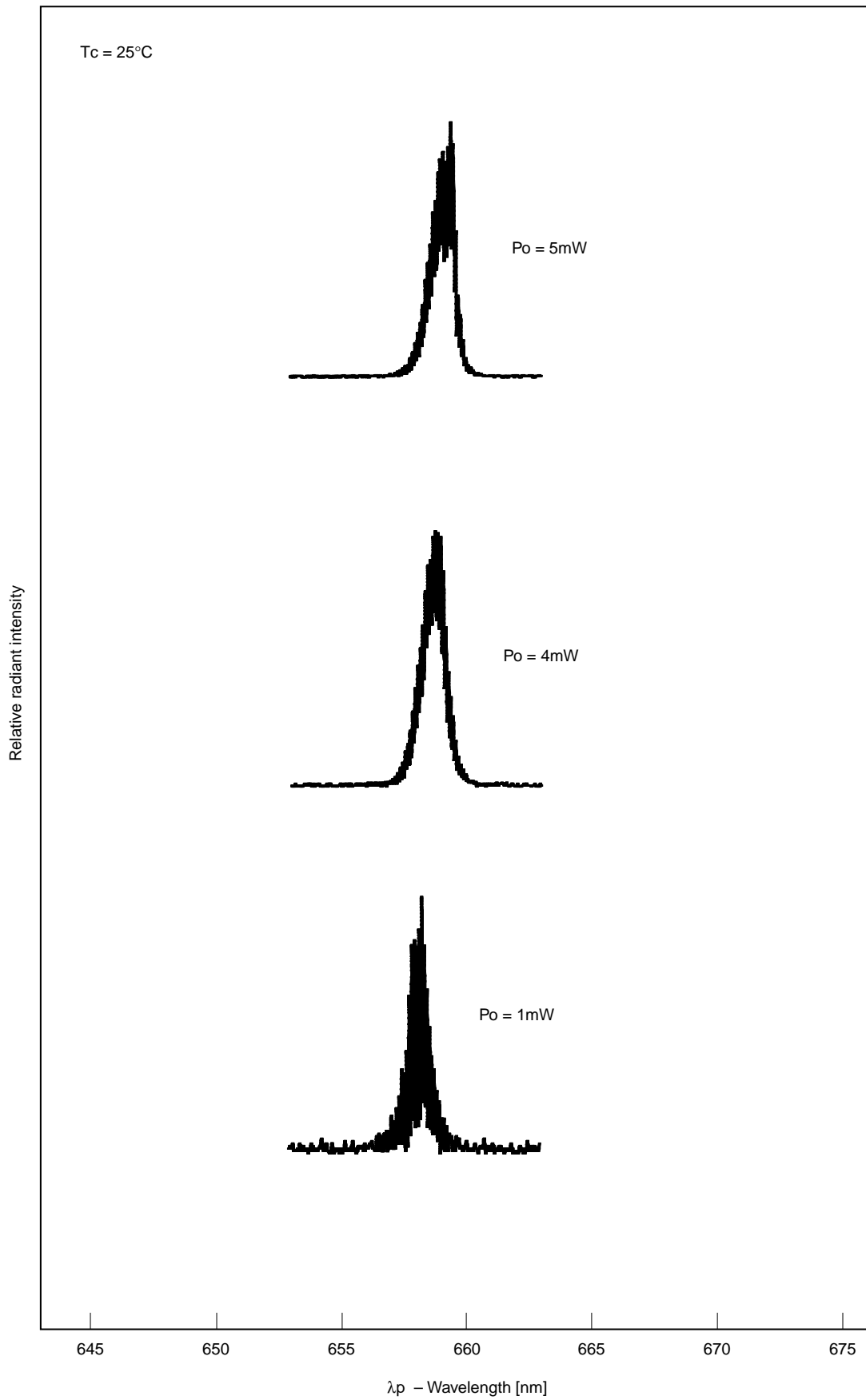
Monitor current vs. Temperature characteristics



Temperature dependence of spectrum



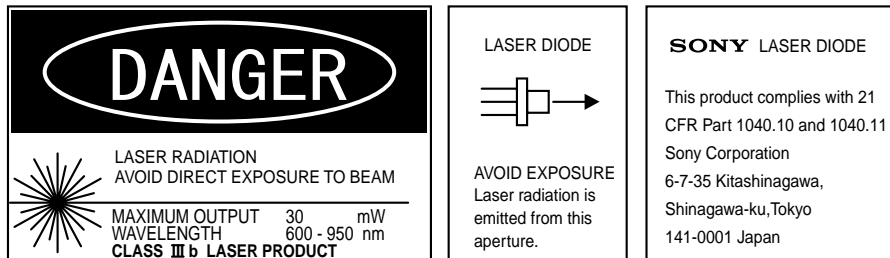
Power output dependence of spectrum



Notes on Operation

Care should be taken for the following points when using this product.

- (1) This product corresponds to a Class 3B product under IEC60825-1 and JIS standard C6802 "Laser Product Emission Safety Standards".



- (2) Eye protection against laser beams

Take care not to allow laser beams to enter your eyes under any circumstances.

For observing laser beams, ALWAYS use safety goggles that block laser beams. Usage of IR scopes, IR cameras and fluorescent plates is also recommended for monitoring laser beams safely.

- (3) Gallium Arsenide

This product uses gallium arsenide (GaAs). This is not a problem for normal use, but GaAs vapors may be potentially hazardous to the human body. Therefore, never crush, heat to the maximum storage temperature or higher, or place the product in your mouth.

In addition, the following disposal methods are recommended when disposing of this product.

1. Engaging the services of a contractor certified in the collection, transport and intermediate treatment of items containing arsenic.
2. Managing the product through to final disposal as specially managed industrial waste which is handled separately from general industrial waste and household waste.

- (4) Prevention of surge current and electrostatic discharge

Laser diodes are most sensitive to electrostatic discharge among semiconductors. When a large current is passed through the laser diode for even an extremely short time, the strong light emitted from the laser diode promotes deterioration and then destruction of the laser diode. Therefore, note that surge current should not flow to the laser diode driving circuit from switches and others. Also, if the laser diode is handled carelessly, it may be destroyed instantly because electrostatic discharge is easily applied by a human body. Therefore, be extremely careful about overcurrent and electrostatic discharge.

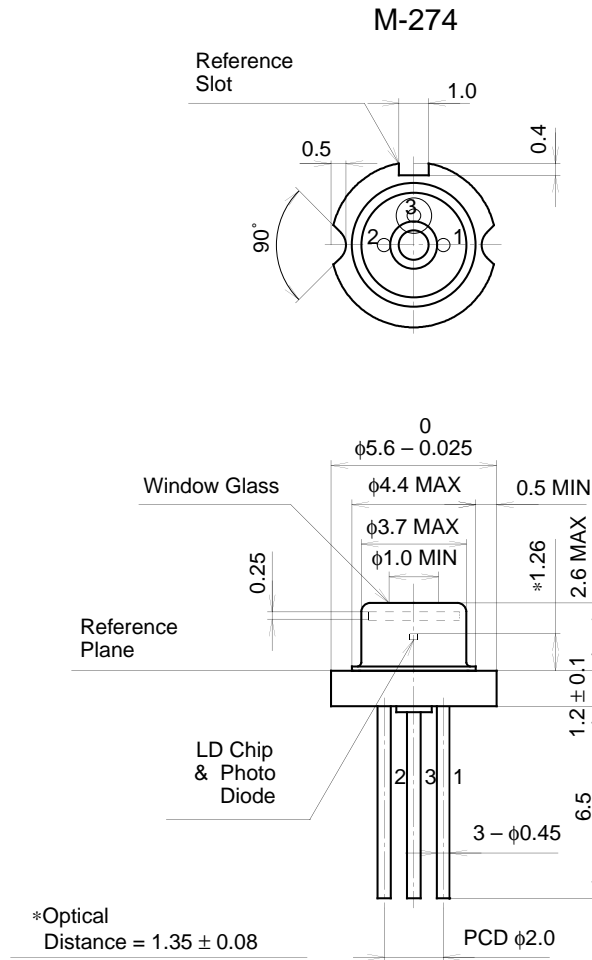
- (5) Use for special applications

This product is not designed or manufactured for use in equipment used under circumstances where failure may pose a risk to life and limb, or result in significant material damage, etc.

Consult your Sony sales representative when investigating use for medical, vehicle, nuclear power control or other special applications. Also, use the power supply that was designed not to exceed the optical power output specified at the absolute maximum ratings.

Package Outline

Unit: mm



| | |
|------------|-------|
| SONY CODE | M-274 |
| EIAJ CODE | _____ |
| JEDEC CODE | _____ |

| | |
|--------------|------|
| PACKAGE MASS | 0.3g |
|--------------|------|