

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Wavelength independent
- High power handling capability
- Low PDL
- Fast response time
- Small dimensions
- Completely passive
- Reliable device
- Inline configuration

### Applications

- Optically amplified networks
- Field test equipment
- Laboratory test equipment
- OEM optically amplified systems
- End user networks



## Optical Fuse

PATENT PENDING

Series 86560



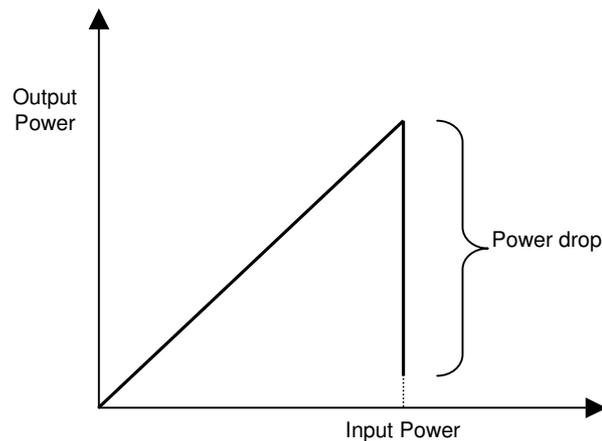
## DESCRIPTION

The Optical Fuse is a passive component, designed to protect expensive equipment and fiber cables from damage due to optical power spikes and surges. This compact device has a single input and a single output fiber port. When the input power is lower than a designated threshold level, the fuse remains transparent. However, the fuse becomes permanently opaque when the optical power exceeds the specified threshold level.

To protect against power spikes and surges, the Optical Fuse is placed either at the input port of an optical device, such as a detector, or at the output port of a high power device, such as a laser or optical amplifier. The typical operating power, of a fuse protected optical system, is approximately 3dB (50%) below the threshold level. At these operating conditions the insertion loss of the fuse is typically between 0.5 to 1dB (80-90% transmission).

By introducing an Optical Fuse into test set-ups in laboratories or networks, one is assured protection against inevitable spikes and excessive power levels that can damage equipment and installed fiber. An activated (burnt) fuse blocks the forward power without escalating the reflected power thus preventing damage to its surroundings.

## OUTPUT POWER Vs. INPUT POWER



CW input power should not exceed 32dBm

## REFERENCE INFORMATION



# Optical Fuse

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### Optical

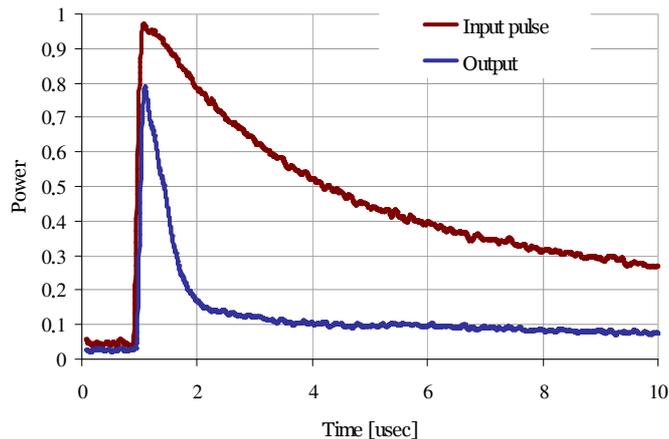
Threshold Power \* ('TH'): 18-32dBm (60mW-1.6W)  
Wavelength Range: C+L bands (850-1650nm ,per request)  
Response Time (Typical):  
  Threshold < 29dBm (800mW) <30msec @6db above TH  
  Threshold > 25dBm(300mW) <50msec @1db above TH  
Insertion Loss: <1dB(typical)  
Polarization Dependent Loss: <0.05dB  
Wavelength Dependent Loss: <0.15dB(C+L bands)  
Return Loss: >40dB (typical)  
Power Drop at Threshold: >10dB  
Operating Power: Up to 3dB below threshold

\*Various threshold powers between 18dBm and 32dBm (60mW-1.6W) are available

### Physical

Connection Methods: Pigtail or optional connectors (All major connector types)  
Fiber Type: SMF, bare 250mm fiber, 900mm buffered fiber ( 1.6/2.0/3.0mm riser or plenum jacket with Kevlar options per request)  
Operating Temperature: -10 – 70 °C  
Dimensions: L=40mm,  $\phi$  =4mm

## OPTICAL FUSE RESPONSE TIME



RED-Input pulse    BLUE-Output pulse    Response time in the graph is ~ 5 $\mu$ sec

## ORDERING INFORMATION

### Part Number

KL-UX1 - X2 X3 X4 X5 - X6 X7

X1= product type

X2X3 = fiber type

X4 = fiber diameter

X5 = connector type

X6X7 = Threshold (dBm)

### Description

For product versions not listed here or customized optical fuses please contact sales.

I - inline ,P- optional plug

01 - SMF28

1- 250um, 2- 900um

0 - no connector, 1 – FC/PC, 2 – FC/APC, 3- SC/PC

**Available from 18dBm to 32dBm (100mW-1.6W)**

for example: for 20dBm write: 20

for 32dBm write: 32

*All proprietary and Intellectual property rights in and to the Optical Fuse are the exclusive property of KiloLambda IP Limited.*

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