

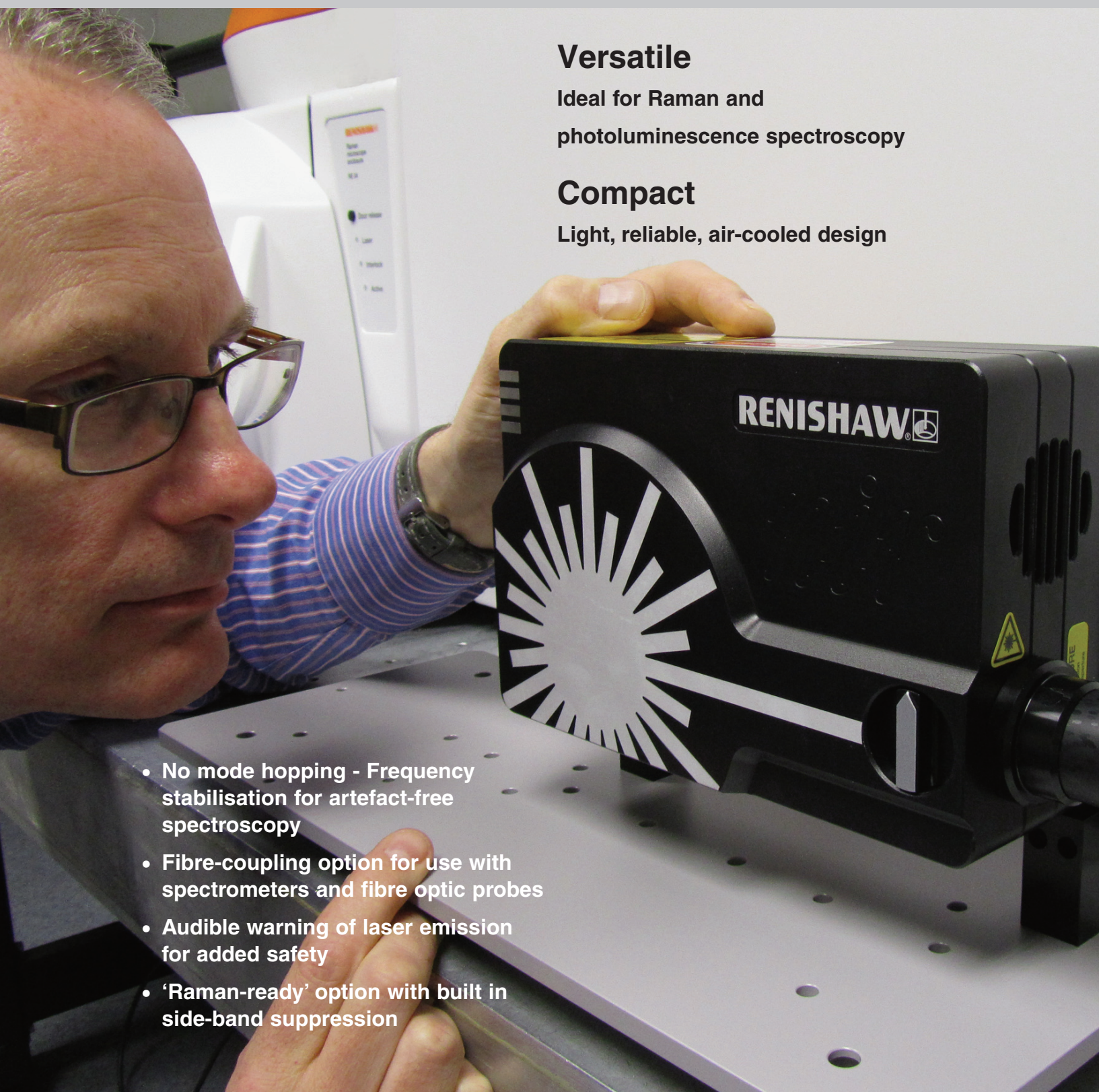
# Renishaw's high power 785 nm and 830 nm lasers

## Versatile

Ideal for Raman and  
photoluminescence spectroscopy

## Compact

Light, reliable, air-cooled design

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- No mode hopping - Frequency stabilisation for artefact-free spectroscopy
  - Fibre-coupling option for use with spectrometers and fibre optic probes
  - Audible warning of laser emission for added safety
  - 'Raman-ready' option with built in side-band suppression

**Renishaw plc**  
Spectroscopy Products Division  
Old Town, Wotton-under-Edge,  
Gloucestershire GL12 7DW  
United Kingdom

**T** +44 (0) 1453 524524  
**F** +44 (0) 1453 523901  
**E** [raman@renishaw.com](mailto:raman@renishaw.com)  
[www.renishaw.com](http://www.renishaw.com)

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apply innovation™

## Detailed specification

General specifications	Value
Wavelength	785 nm ( $\pm 0.25$ nm) 830 nm ( $\pm 0.25$ nm)
Frequency stability <sup>a,b,c</sup>	$< 1 \text{ cm}^{-1}$
Repeatability <sup>a,c</sup>	$< 1 \text{ cm}^{-1}$
Absolute power <sup>d</sup>	$300 \pm 30 \text{ mW}$
Power stability <sup>b</sup>	$\pm 1\%$
SMSR	-24 dB (0.4%)
Beam size (nominal)	5 mm $\times$ 5 mm at aperture 6 mm $\times$ 10 mm at 1.7 m
Beam divergence	$< 4 \text{ mrad}$
Pointing stability	$< 1 \text{ mrad}$
Polarisation state	Linear, vertical ( $\pm 5^\circ$ )
Polarisation purity	95%
Mass	1.5 kg (nominal)

### Fibre coupling performance

Fibre core size	Power output
25 $\mu\text{m}$	45 mW
50 $\mu\text{m}$	150 mW
62.5 $\mu\text{m}$	180 mW
100 $\mu\text{m}$	240 mW

### Operating conditions

Ambient temperature (recommended)	5 °C to 40 °C
Air humidity	Maximum 80% RH up to 31 °C, decreasing linearly to a maximum 50% at 40 °C
Warranty	3 000 hour operation or 12 month (whichever comes first)
Warm-up time	30 minute

### Power supply (options)

Input voltage	110 VAC to 264 VAC
Frequency	50 Hz to 60 Hz
Power	15 W
Output voltage	15 VDC

### Standards

Electromagnetic compatibility	EN61326-1:2006 FCC CFR 47 Part15:2004
Laser safety	EN60825-1:2007 CDRH, 21CFR1040

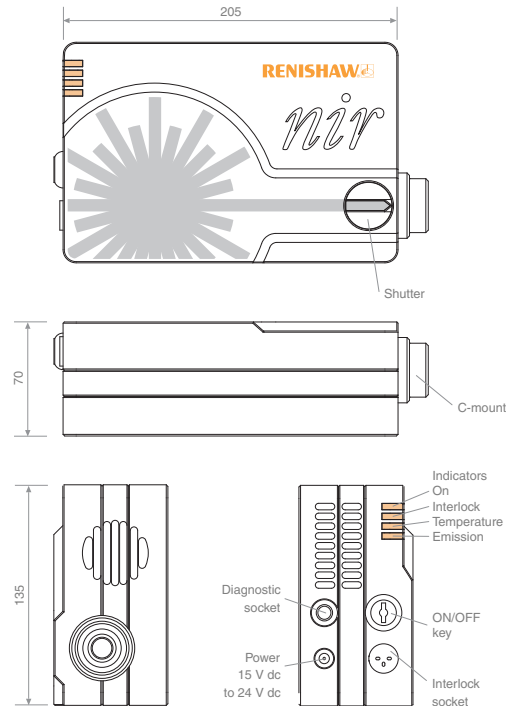
### Optional accessory

Fibre-optic coupler for C-mount

#### Notes

- a FWHM (full width half maximum)  
b  $\pm 2^\circ\text{C}$  over 16 hour  
c After 30 minute warm-up  
d Measured at output aperture

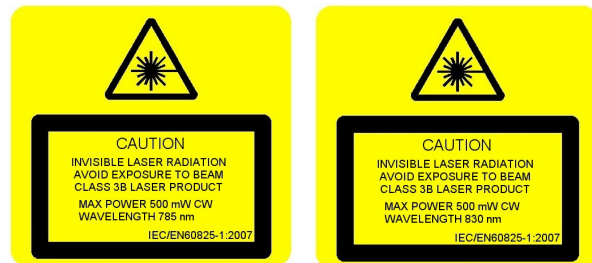
## Dimensions - All dimensions in mm



## Safety

These are Class 3B products.

Appropriate safety guidelines should be followed when using the RL785 and RL830.



COMPLIES WITH  
21CFR1040.10 AND 1040.11 EXCEPT  
FOR DEVIATIONS PURSUANT TO LASER  
NOTICE NO.50 DATED 24 JUNE 2007

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