

Ultra High Performance Liquid Chromatograph

Nexera X2 Specifications



Specifications

System Controllers CBM-20A / 20Alite



	CBM-20A (228-45012-XX)	CBM-20Alite (228-45011-XX)
Connectable units	Solvent delivery units: 4 max, Autosampler: 1, Column oven: 1, Detectors: 2 max, Fraction collector: 1 Sub-controllers: 2 max	Solvent delivery units: 4 max, Autosampler: 1 (excluding SIL-10AF/10AP/10Ai), Column oven: 1, Detectors: 2 max
Number of connectable units	8 (expansion possible up to 12)	5 (including the unit incorporating the system controller)
Data buffering	Approx. 24 hours for an analysis (at 500 ms sampling rate; available only with LabSolutions/LCsolution)	
Event I/O	4 inputs, 4 outputs	2 inputs, 2 outputs
Analog board	Up to 2 boards can be mounted.	Mounting not supported.
Operating temperature range	4 to 35°C	
Dimensions, weight	W260 × D420 × H140 mm, 5.5 kg	W120 × D100 × H20 mm, 0.5 kg
Power requirements	AC 110 V, 230 V, 100 VA, 50/60 Hz	Supplied from the unit

Solvent Delivery Unit LC-30AD



	LC-30AD (228-45162-XX)
Solvent delivery method	Micro-volume double plunger pump
Plunger capacity	10 µL
Flow-rate setting range	0.0001 to 3.0000 mL/min (to 130 MPa) 3.0001 to 5.0000 mL/min (to 80 MPa) 5.0001 to 10.0000 mL/min (to 22 MPa)
Flow-rate accuracy	± 1% (under specified conditions)
Flow-rate precision	Less than 0.06%RSD or 0.02 minSD whichever is the greater
Gradient type	High-pressure/low-pressure gradient mixing
Gradient mixing accuracy	± 0.5% (under specified conditions)
Plunger rinsing mechanism	Equipped with an automatic rinsing kit
Safety measures	Liquid-leakage sensor, high-pressure/low-pressure limits
Available pH range	1 to 9
Operating temperature range	4 to 35°C
Dimensions, weight	W260 × D500 × H140 mm, 11.8 kg
Power requirements	AC 110 V, 230 V, 150 VA, 50/60 Hz

Degassing Unit DGU-20A5R / 20A3R



	DGU-20A5R (228-45019-XX)	DGU-20A3R (228-45018-XX)
Number of degassed solvents	5	3
Degassed flow-line capacity	400 µL/1 flow-line	
Operating temperature range	4 to 35°C	
Dimensions, weight	W260 × D420 × H70 mm, 4 kg	W260 × D420 × H70 mm, 3.9 kg
Power requirements	Supplied from LC-30AD	

Column Ovens CTO-30A / 30AS



	CTO-30A (228-45160-XX)	CTO-30AS (228-45178-XX)*
Type	Block heating system	
Temperature setting range	4 to 150°C in 1°C steps	4 to 85°C in 1°C steps
Temperature control precision	± 0.05°C (room temperature 25°C)	
Temperature control range	5°C above room temperature to 150°C	10°C above room temperature to 85°C
Column size and capacity	150 mL. × 4.6 mmI.D. column × 2	50 mL. × 4.6 mmI.D. column × 1
Devices that can be accommodated	Gradient Mixer, High-Pressure Flow Switching Valves (2), Post Column Cooler etc.	—
Functions	Linear temperature programs supported	
Safety measures	Solvent sensor, Liquid-leakage sensor, temperature fuse, temperature upper limit	Liquid-leakage sensor (built-in SIL-30AC), temperature fuse, temperature upper limit
Operating temperature range	4 to 35°C	
Dimensions, weight	W260 × D500 × H210 mm, 10 kg	W50 × D80 × H200 mm, 1 kg (attached three-staged to the side of SIL-30ACMP)
Power requirements	AC 110 V, 230 V, 300 VA, 50/60 Hz	Supplied from the SIL-30ACMP

* SIL-30ACMP is required.

Column Ovens CTO-20A / 20AC



	CTO-20A (228-45009-XX)	CTO-20AC (228-45010-XX)
Type	Forced-air circulation	
Cooling method	None	Electronic cooling
Temperature setting range	4 to 85°C in 1°C steps	
Temperature control precision	0.1°C max. (typically 0.04°C max.)	
Temperature control range	10°C above room temperature to 85°C	10°C below room temperature to 85°C
Storage capacity	W220 × D95 × H365 mm	
Devices that can be accommodated	Manual Injectors (2), Gradient Mixer, High-Pressure Flow Switching Valves (2), etc.	
Functions	Linear temperature programs supported	
Safety measures	Solvent sensor, temperature fuse, temperature upper limit	
Operating temperature range	4 to 35°C	
Dimensions, weight	W260 × D420 × H415 mm, 20 kg	W260 × D420 × H415 mm, 23 kg
Power requirements	AC 110 V, 230 V, 500 VA, 50/60 Hz	

High-Pressure Flow-Line Selection Valves



	FCV-32AH (228-45166-91)
Valve type	2-position / 6-port rotary valve
Maximum operating pressure	130 MPa
Operating pH range	1 to 14
Operating temperature range	4 to 35°C
Dimensions, weight	W110 × D250 × H110 mm, 4 kg
Power requirements	Supplied from the unit

Autosamplers SIL-30AC / 30ACMP



	SIL-30AC (228-45157-XX)	SIL-30ACMP (228-45175-XX)
Injection method	Standard: Total sample injection, variable injection volume Option: Loop injection, adjustable or fixed volume loop injection	Total sample injection, variable injection volume
Maximum operating pressure	130 MPa	
Injection-volume setting range	Total volume injection: 0.1 to 50 µL Loop injection: 0.1 to 20 µL (select the loop from 5 µL and 20 µL) (0.1 to 9.9 µL in 0.1 µL increments, 10 to 50 µL in 1 µL increments)	0.1 to 50 µL (0.1 to 9.9 µL in 0.1 µL increments, 10 to 50 µL in 1 µL increments)
Number of processed samples	175 (w/1 mL sample vials), 105 (w/1.5 mL sample vials), 50 (w/4 mL sample vials), 192 (w/2 microtiter plates each with 96 wells), 768 (w/2 microtiter plates each with 384 wells), Also, ten 1.5 mL vials in addition to each of the above.	324 (w/6 microtiter plates for 1.5 mL vials), 576 (w/6 microtiter plates each with 96 wells), 2304 (w/6 microtiter plates each with 384 wells), Also, ten 1.5 mL vials in addition to each of the above.
Injection-volume accuracy	± 1% (total volume injection, under specified conditions)	
Injection-volume precision	RSD 0.25% (total volume injection, under specified conditions)	RSD 1.0% (0.5 to 0.9 µL), RSD 0.5% (1.0 to 1.9 µL), RSD 0.25% (2.0 to 4.9 µL), RSD 0.2% (5.0 to 50 µL) (total volume injection, under specified conditions)
Cross-contamination	0.0015% or less (without rinsing, caffeine, detection UV)	0.0015% or less (without rinsing, caffeine, detection UV) 0.0015% or less (rinsing, chlorhexidine, MS)
Injection operating time	22 sec (specified conditions)	14 sec (specified conditions)
Number of repeated injections	30 max. per sample	
Needle rinsing	Set freely before and after sample injection, outer and inner of needle, 4 solvents max.	
Sample cooler	Block cooling/heating, used together with dehumidifying function, 4 to 40°C	
Safety measures	Liquid-leakage sensor	
Operating pH range	1 to 9 (1 to 14 option)	
Operating temperature range	4 to 35°C	
Dimensions, weight	W260 × D500 × H415 mm, 30 kg	W540 × D500 × H415 mm (excluding protrusions), 61 kg
Power requirements	AC 110 V, 230 V, 300 VA, 50/60 Hz	

Rack Changer II



	Rack Changer II (228-45164-XX)
Compatible plates	96-well MTP, 96-well DWP, 384-well MTP 384-well DWP, 1.5mL vial plate (54 vials)
Number of processed plates	12
Sample cooler	Block cooling/heating, used together with dehumidifying function, 4 to 40°C
Operating temperature range	4 to 35°C
Dimensions, weight	W425 × D500 × H415 mm, 32 kg
Power requirements	AC 110 V, 230 V, 350 VA, 50/60 Hz

UV-VIS Detector SPD-20A UFLC



	SPD-20A UFLC (228-45130-XX)
Light source	Deuterium (D ₂) lamp
Wavelength range	190 to 700 nm
Bandwidth	8 nm
Wavelength accuracy	± 1 nm max.
Wavelength precision	± 0.1 nm max.
Noise	1.2 × 10 ⁻⁵ AU (with standard semi-micro cell, under specified conditions) <0.5 × 10 ⁻⁵ AU (with conventional cell, under specified conditions)>
Drift	2 × 10 ⁻⁴ AU/h (with standard semi-micro cell, under specified conditions) <1 × 10 ⁻⁴ AU/h (with conventional cell, under specified conditions)>
Linearity	2.5 AU (with standard semi-micro cell, ASTM)
Cell temperature setting range	9 to 50°C in 1°C step
Cell temperature range	5°C above room temperature to 50°C
Cell	Standard semi-micro cell: Optical path length: 5 mm, Capacity: 2.5 µL, Pressure: 12 MPa Optional conventional cell: Optical path length: 10 mm, Capacity: 12 µL, Pressure: 12 MPa
Functions	Dual-wavelength detection (190 to 370 nm or 371 to 700 nm), ratio-chromatogram output, wavelength scanning
Safety measures	Liquid-leakage sensor
Operating temperature range	4 to 35°C
Dimensions, weight	W260 × D420 × H140 mm, 13 kg
Power requirements	AC 110 V, 230 V, 150 VA, 50/60 Hz

Photodiode Array Detector SPD-M30A



	SPD-M30A (228-45196-XX)
Light source	Deuterium (D ₂) lamp
Number of diode elements	1024
Wavelength range	190 to 700 nm
Slit width	1 nm, 8 nm
Wavelength accuracy	± 1 nm
Noise	0.4 × 10 ⁻⁵ AU (under specified conditions)
Drift	0.5 × 10 ⁻³ AU/h (under specified conditions)
Linearity	2.0 AU (ASTM standard)
Cell	Standard cell: Optical path length: 10 mm, Capacity: 1 µL, Pressure: 8 MPa Optional high-sensitivity cell: Optical path length: 85 mm, Capacity: 9 µL, Pressure: 8 MPa
Functions	Contour output spectrum library, MAX plotting
Safety measures	Liquid-leakage sensor
Operating temperature range	4 to 35°C
Dimensions, weight	W260 × D500 × H140 mm, 12 kg
Power requirements	AC 110 V, 230 V, 150 VA, 50/60 Hz

Photodiode Array Detector SPD-M20A



	SPD-M20A (228-45005-XX)
Light source	Deuterium (D ₂) lamp, tungsten (W) lamp
Number of diode elements	512
Wavelength range	190 to 800 nm
Slit width	1.2 nm, 8 nm
Wavelength accuracy	± 1 nm max.
Noise	0.6 × 10 ⁻⁵ AU (under specified conditions)
Drift	5 × 10 ⁻⁴ AU/h (under specified conditions)
Linearity	2.0 AU (ASTM standard)
Cell temperature setting range	9 to 50°C in 1°C step
Cell temperature range	5°C above room temperature to 50°C
Cell	Standard conventional cell: Optical path length: 10 mm, Capacity: 10 µL, Withstand pressure: 12 MPa Optional semi-micro cell: Optical path length: 5 mm, Capacity: 2.5 µL, Withstand pressure: 12 MPa Optional cell for high-sensitivity/high-speed analysis: Optical path length: 10 mm, Capacity: 8 µL, Withstand pressure: 12 MPa
Functions	Contour output, spectrum library, MAX plotting
Safety measures	Liquid-leakage sensor
Operating temperature range	4 to 35°C
Dimensions, weight	W260 × D420 × H140 mm, 12 kg
Power requirements	AC 110 V, 230 V, 150 VA, 50/60 Hz

Fluorescence Detectors RF-20A / 20Axs



	RF-20A (228-45147-XX)	RF-20Axs (228-45148-XX)
Light source	Xenon lamp	Xenon lamp, low-pressure mercury lamp (to check wavelength accuracy)
Wavelength range	200 to 650 nm	200 to 750 nm
Spectral bandwidth		20 nm
Wavelength accuracy		± 2 nm
Wavelength reproducibility		± 0.2 nm
S/N	Water Raman peak S/N >1200	Water Raman peak S/N >2000
Cell temperature setting range	—	4 to 40°C in 1°C step
Cell temperature control range	—	10°C below room temperature to 40°C
Cell	Standard conventional cell: Capacity 12 µL, Pressure: 2 MPa Optional semi-micro cell: Capacity: 3 µL, Pressure: 2 MPa	
Functions	Four-wavelength detection, wavelength scanning	
Safety measures	Liquid-leakage sensor	
Operating temperature range	4 to 35°C	
Dimensions, weight	W260 × D420 × H210 mm, 16 kg	W260 × D420 × H210 mm, 18 kg
Power requirements	AC 110 V, 230 V, 400 VA, 50/60 Hz	



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