Device support in KNAUER CDS / KNAUER device support in 3rd party software
OpenLab® CDS EZChrom Edition / ClarityChrom® / Chromeleon™ / ChromGate® / PurityChrom®
other software

The tables list the software package and driver version (in case multiple versions exist); **the version number listed is the <u>first version</u> that supports the respective device**. Newer software versions also include the driver. This <u>does not apply</u> to Chromeleon 7.2/7.3 and PurityChrom 5.x/6.x; therefore, the versions for these software packages and the device support in it are mentioned separately.

Limitations are marked with superscript, e.g. [1]. Limitations may affect device functionality, control interfaces or software versions. "n/a" means, that a device is not supported, "-" that no information is available. If a device is supported via different communication ports, for most devices the desired port has to be selected directly in the device. From version 7.4.1, ClarityChrom® *Prep* is discontinued; all its prep-functionality is now available in ClarityChrom® with KNAUER FRC license. For some time, ChromGate® was also available as "PLATINblue Edition" for the PLATINblue devices, while the standard version is named as "regular". From driver version 2825 all drivers are available in the regular version; the PLATINblue Edition was discontinued. ChromGate® was discontinued in 2013 at all. OpenLab® CDS EZChrom Edition version number shows the EZChrom version. It is only available from the instrument window; the version of the OL Control Panel does not correspond. KNAUER **OEM** devices are **not** supported by the regular KNAUER drivers. At the end of the document other software packages, e.g. KNAUER Mobile Control, are listed. The "Table of contents" includes links for jumping to the desired part of the document.
Drivers for KNAUER devices for OpenLab® CDS ChemStation Edition or OpenLab® CDS (2.x) are <u>not</u> available.

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Pumps	OpenLab® CDS EZChrom Edition CDS version and Driver version	ClarityChrom® CDS version and Driver version	Chromeleon™ CDS version	ChromGate® CDS version and Driver version	PurityChrom® CDS and Driver version
AZURA® Pump P 8.1L	OLEE A.04.06 Driver 2197	CC 8.7.0.107 Driver 6076	Cm 7.3 scheduled	n/a	n/a
AZURA® Pump P 6.1L	OLEE A.04.05 Driver 1022 [14]	CC 5.0.2 Driver 4095 [1, 15]	Cm 7.3. Class 3 driver [1] Cm 7.2 Class 3 driver [1]	n/a	Version 6 R1 2 [1] Version 5.07.039 [1]
AZURA® Pump P 2.1L	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3078 [1]	Cm 7.3 scheduled Cm 7.2 Class 3 driver [1]	CG 3.3.2 Driver 2825 [3]	Version 6 R1 2 [1] Version 5.07.039 [1, 16]
AZURA® Pump P 4.2S [17]	n/a [17]	CC 9.1.0 Driver 6149	Cm 7.3 scheduled n/a [17]	n/a [17]	Coming soon [17]
AZURA® Pump P 2.1S/P 4.1S [6]	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3078	Cm 7.3 scheduled Cm 7.2 Class 3 driver	CG 3.3.2 Driver 1787	Version 6 R1 2 Version 5.07.039
PLATINblue Pump P-1	OLEE A.04.05 Driver 1017	CC 5.0.3 Driver 4102	n/a	CG 3.3.2 PLATINblue Edition 1751; Regular 2825	n/a
Smartline Pump 1050 [4]	OLEE A.04.05 Driver 1017	CC 2.6.5 Driver 1100	n/a	CG 3.3.2 Driver 1751	Version 5.07.039
Smartline Pump 1000 [13]	n/a	CC 2.4.4	n/a [2]	CG 3.1	Version 5.07.039
Smartline Pump 100 [5, 6]	OLEE A.04.05 Driver 1017	CC 2.6	n/a [2]	CG 3.3.1 Driver 1640	Version 5.07.039

Pumps (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver version	ClarityChrom® CDS version and Driver version	Chromeleon™ CDS version	ChromGate® CDS version and Driver version	PurityChrom® CDS and Driver version
Preparative Pump 1800 (also WellChrom K-1800) [13]	n/a	CC 2.6	n/a	CG 3.1	Version 5.07.039
WellChrom Pump K-1001 [13]	n/a	CC 2.6	n/a	CG 2.55 [7]	Version 5.07.039
WellChrom Pump K-1000 [13]	n/a	CC 2.6	n/a	CG 2.55 (not supported in version 3.1) [8]	n/a
WellChrom Pump K-501 [9]	n/a	CC 2.6	n/a	CG 2.8	n/a
WellChrom Pump K-120	n/a	CC 2.6	n/a	CG 2.8	n/a
BlueShadow Pumps 10P/20P [6]	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3078	n/a [2]	CG 3.3.2 Driver 1787	Version 5.07.039
BlueShadow Pump 40P	OLEE A.04.05 Driver 1022	CC 5.0.2 Driver 4095 [10]	n/a	n/a	Version 5.07.039
BlueShadow Pump 80P	OLEE A.04.05 Driver 1022	CC 5.0.2 Driver 4095 [10]	n/a [2]	n/a	Version 6 R1 2 Version 5.07.039
Kontron Pumps 320/322/325	n/a	CC 3.0.5 [11]	-	CG 3.1.7 Driver 446 [12]	n/a
Kontron Pumps 420/422/425	n/a	CC 3.0.5 [11]	-	CG 3.1.7 Driver 446 [12]	Version 5.07.039
Kontron Pumps 520/522/525	n/a	CC 3.0.5 [11]	-	CG 3.1.7 Driver 446 [12]	n/a

[1] – Constant Pressure Mode / Isobar Mode is not supported
[2] – generic drivers do not support all device features (e. g. no Isobar Mode); only control via RS-232; should also work with Chromeleon™ 7.x
[3] – support of RS-232 port from driver version 2844
[4] – for control via RS-232 only baud rate of 115200 is supported
[5] – can be controlled as pump K-120 only via RS-232 without pressure sensor in former software versions
[6] – to set a static IP address a separate tool is required
[7] – from ChromGate® version 3.1 only with firmware version 5.xx or higher; pumps with firmware up to version 4.XX has to be configured as K-1000
[8] – from ChromGate® version 3.1 no pressure information; also K-1001 with firmware up to version 4.XX, no pressure trace
[9] – from firmware version 1.23, model K-500 is not supported

Detectors [for all PDA or scanning UV detectors the 3D UV license option is required to acquire and review the scan (3D) data]	OpenLab® CDS EZChrom Edition CDS version and Driver version	ClarityChrom® CDS version and Driver version	Chromeleon™ CDS version	ChromGate® CDS version and Driver version	PurityChrom® CDS and Driver version
AZURA® Detector UVD 2.1L [1]	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3078	Cm 7.3 scheduled Cm 7.2 Class 3 driver	CG 3.3.2 Driver 2825	Version 6 R1 2 Version 5.08.034 [27]
AZURA® Detector MWD 2.1L	OLEE A.04.05 driver 2068	CC 5.0.5 Driver 5011	Cm 7.3 scheduled Cm 7.2 Class 3 driver	n/a	Version 6 R1 2 [15] Version 5.07.067 [15,27]
AZURA® Detector UVD 2.1S [2]	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3055	Cm 7.3 scheduled Cm 7.2 Class 3 driver	CG 3.3.2 Driver 1787	Version 6 R1 2 Version 5.07.039 [27]
AZURA® Detector DAD 6.1L [23]	OLEE A.04.05 Driver 2047	CC 5.0.5 Driver 4110	Cm 7.3 Class 3 driver Cm 7.2 Class 3 driver	n/a	Version 6 R2 2 Version 5.07.102 [16]

Detectors (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver version	ClarityChrom® CDS version and Driver version	Chromeleon™ CDS version	ChromGate® CDS version and Driver version	PurityChrom® CDS and Driver version
AZURA® Detector DAD 2.1L [23]	OLEE A.04.05 Driver 2068	CC 5.0.5 Driver 5011	Cm 7.3 scheduled Cm 7.2 Class 3 driver	n/a	Version 6 R2 2 Version 5.07.102 [16]
AZURA® Detector RID 2.1L / RID 2.1L Highflow	OLEE A.04.05 Driver 2092	CC 6.0.1 Driver 5037 (compatible with CC/CCP 5.x versions)	Cm 7.3 scheduled Cm 7.2 Class 3 driver	n/a	Version 6 R2 2 Version 5.08.024 [17, 18, 25]
AZURA® Conductivity Monitor CM 2.1S [2]	OLEE A.04.05 Driver 1022	CC 5.0.2 Driver 4095	n/a	Generic Driver June 2013 [5]	Version 6 R1 2 Version 5.07.039 [18]
AZURA® Fluorescence Detector FLD 2.1L [35]	n/a	CC 9.1.0 Driver 6149 [35]	n/a	n/a	n/a
Runge Mikron 81 Conductivity Monitor	n/a	CC 8.5, supported by manufacturer	n/a	n/a	Version 6 R1 2 Version 5.09.149 [18]
AZURA® ECD 2.1	n/a	Supported as Antec Decade Elite; CC 5.X, USB, LAN	Cm 7.2 Class 3 driver	n/a	n/a
PLATINblue Detector MW-1 [3]	OLEE A.04.05 Driver 1017	CC6.1.0; Driver 5015	n/a	CG 3.3.2 PLATINblue Edition 1751; Regular 2825	n/a
PLATINblue DAD PDA-1 [23]	OLEE A.04.05 Driver 1017	CC 5.0.2 Driver 4095 [4]	n/a	CG 3.3.2; PLATINblue Edition 1751; Regular 2825	n/a
Smartline UV Detector 2500 [6]	n/a	CC 2.4.4	n/a [5]	CG 3.1	Version 5.07.039

Detectors (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
Smartline UV Detector 2520 [3], [7]	OLEE A.04.05 Driver 1017	CC 3.0.5 Driver 3033	n/a	CG 3.3.2 Driver 1751	n/a
Smartline UV Detector 2550 [3], [7], [23]	OLEE A.04.05 Driver 1017	CC 2.6.5 Driver 1079	n/a	CG 3.3.1 Driver 1640	n/a
Smartline UV Detector 2600 [23]	OLEE A.04.05 Driver 1017	CC 2.4.4	n/a [5]	CG 3.1	Version 5.07.039
Smartline UV Detector 200	n/a	CC 2.6	n/a	CG 3.1.7 Driver 1466	n/a
Smartline PDA Detector 2800 [9], [23]	n/a	CC 2.4.4	n/a	CG 3.1.7 Driver 446	Version 5.07.039
Smartline PDA Detector 2850 [23]	OLEE A.04.05 Driver 1017	CC 2.6.5 Driver 1100	n/a	CG 3.3.2 Driver 1751	n/a
Smartline RI Detector 2300	OLEE A.04.05 Driver 1017	CC 2.4.4	n/a	CG 3.1	n/a
Smartline RI Detector 2400	OLEE A.04.05 Driver 1017	CC 2.4.4	n/a	CG 3.1	n/a
Smartline Conductivity Monitor S2900	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3055	n/a	Generic Driver September 2010	n/a
WellChrom UV Detector K-2000 [8]	n/a	CC 2.6	n/a	CG 2.8	n/a
WellChrom UV Detector K-2001	n/a	CC 2.6	n/a	CG 2.8	n/a
WellChrom UV Detector K-2500 [8]	n/a	CC 2.6	n/a	CG 2.8	n/a
WellChrom UV Detector K-2501 [6]	n/a	CC 2.6	n/a	CG 2.8	n/a
WellChrom UV Detector K-2600 [22], [23]	OLEE A.04.05 Driver 2026	CC 2.6	n/a [5]	CG 2.55	n/a

Detectors (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
WellChrom PDA Detector K-2700 [9), 23)]	n/a	PCI with RS-422 (PCI card driver supports up to Windows 7 32-bit) / LAN	n/a	CG 2.55, LAN from 3.1	n/a
WellChrom PDA Detector K-2800 [9), 23)]	n/a	PCI with RS-422 (PCI card driver supports up to Windows 7 32-bit) / LAN	n/a	CG 2.8, LAN from 3.1	n/a
WellChrom RI Detector 2300	n/a	CC 2.6	n/a	CG 2.8	n/a
WellChrom RI Detector 2301	n/a	CC 2.6	n/a	CG 2.8	n/a
WellChrom RI Detector 2400	n/a	CC 2.6	n/a	CG 2.8	n/a
WellChrom RI Detector 2401	n/a	CC 2.6	n/a	CG 2.8	n/a
Shimadzu fluorescence detector RF-10Axl; onboard COM or PCI/PCIe COM board required [10)]	n/a	CC 2.6	n/a	CG 3.1	n/a
Shimadzu fluorescence detector RF-20A/Axs serial control with special **firmware version 0.90** only from KNAUER (limited functionality); onboard COM or PCI/PCIe COM board required [11)]	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3055	n/a	CG 3.3.2; Driver 1787	Version 5.08.024 [24)]

Detectors (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
Shimadzu fluorescence detector RF-20A/Axs **with CBM-20A only** (**CBM-40** does not work with the detector only; Shimadzu pump is also required)	Shimadzu Control with official Shimadzu driver; requires special license, driver not developed by KNAUER [19]	CC 7.2.0, only LC-10 functionality, driver developed by DataApex	Cm 7.2 with official Shimadzu driver; requires special license, driver not developed by KNAUER [20]	n/a	n/a
Virtual Detector	OLEE A.04.05 Driver 1017	CC 2.6.5 Driver 1079	n/a	CG 3.1.6	n/a
BlueShadow Detector 10D [3]	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3055	n/a	CG 3.3.2 Driver 1787	Version 5.07.039 [27]
BlueShadow Detector 40D [3], [7]	OLEE A.04.05 driver 1022	CC 5.0.2 Driver 4095	n/a	n/a	n/a
BlueShadow Detector 50D [3], [7], [23]	OLEE A.04.05 driver 1022	CC 5.0.2 Driver 4095	n/a	n/a	Version 6 R2 2 Version 5.09.134 [1], [27]
Alltech Conductivity Detector 650	n/a	n/a	n/a	CG 3.1.7 Driver 446	n/a
Kontron UV Detector 332/335 [8], [12]	n/a	supported by DataApex; CC 5.0.2	-	CG 3.1.7 Driver 446	n/a
Kontron UV Detector 430/430A/432/435 [8], [12]	n/a	supported by DataApex; CC 5.0.2	-	CG 3.1.7 Driver 446	n/a
Kontron UV Detector 530/532/535 [8], [12]	n/a	supported by DataApex; CC 5.0.2	-	CG 3.1.7 Driver 446	n/a
Kontron DAD 540(/545) [12], [23]	n/a	supported by DataApex; CC 5.0.2	-	CG 3.1.7 Driver 1466	n/a

Detectors (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
Sedere Sedex ELSD 80/85LT	driver from Sedere [28] driver from MayLab Analytical [13]	supported by DataApex from CC 3.0.5, CC 7.4 recommended [30]	Cm 7.3: driver from Sedere [32] Cm 7.2: driver from Sedere [32]	supported, driver was developed by MayLab Analytical [14]	n/a
Sedere Sedex ELSD 90LT	driver from Sedere [28] driver from MayLab Analytical [13]	supported by DataApex from. CC 5.0.2, CC 7.4 recommended [30]	Cm 7.3: driver from Sedere [32] Cm 7.2: driver from Sedere [32]	supported, driver was developed by MayLab Analytical [14]	n/a
Sedere Sedex ELSD 100LT	driver from Sedere [29] driver from MayLab Analytical [13]	supported by DataApex from CC 5.0.2, CC 7.4 recommended [31]	Cm 7.3: driver from Sedere [33] Cm 7.2: driver from Sedere [33]	n/a	n/a
Sedere Sedex LC	driver from Sedere [29] driver from MayLab Analytical [13]	supported by DataApex from CC 5.0.2, CC 7.4 recommended [31]	Cm 7.3: driver from Sedere [33] Cm 7.2: driver from Sedere [33]	n/a	Version 5.07.039 [24]
Sedere Sedex FP	driver from Sedere [29]	supported by DataApex from CC 7.4 [31]	Cm 7.3: driver from Sedere [33] Cm 7.2: driver from Sedere [33]	n/a	n/a
ERC RefractoMax 520 series	n/a	supported by DataApex; CC 6.1.0, RS-232	Cm 7.2 (driver not developed by KNAUER)	n/a	n/a
Antec Leyden LC-EC Detector Decade	n/a	supported by DataApex; CC 5.0.2	-	n/a	Version 5.07.039

Detectors (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
Antec Decade II	n/a	supported by DataApex; CC 5.x, RS-232	-	n/a	n/a
Antec Decade Elite	n/a	supported by DataApex;CC 5.X, USB, LAN	Driver available from Antec	n/a	n/a
Shimadzu CDD-10Avp [26)]	n/a	n/a	n/a	n/a	n/a
Grace/Alltech ELSD 3300	-	supported by DataApex; CC 5.x, LAN	-	Separate, license-free driver upon request or from Grace webpage, driver not developed by KNAUER	-
Berthold HERM LB500 (also with fLumo)	n/a	Ruby script available upon request, USB	Cm 7.2: driver not developed by KNAUER, USB [34)]	n/a	n/a
Berthold Flowstar	n/a	n/a	Cm 7.2: driver not developed by KNAUER, USB [34)]	n/a	n/a
Elysia-raytest radioactivity detectors and monitors Gabi Nova, Gabi *, POMO, Ramona *	-	only upon request to Elysia; no driver from KNAUER available	-	n/a	n/a

[1)] – only LAN is supported
[2)] – to set a static IP address a separate tool is required
[3)] – via RS-232 the maximum data rate is limited to 10 Hz
[4)] – only in ClarityChrom® 5.0.2: Runs with data rates >10 Hz may not be stored with 3D data; recommended maximum data rate is 10 Hz, fixed in later versions from 5.0.3
[5)] – generic drivers do not support all device features; only control via RS-232, **data acquisition requires A/D converter**; should also work with Chromeleon™ 7.x
[6)] – a trigger on Start input also starts the internal wavelength program
[7)] – for control via RS-232 only baud rate 115200 is supported

8) – device only supports data acquisition via RS-232, no wavelength control

9) – LAN only via separate LAN adapter A4442; default communication adapter is PCI interface card for RS-422, PCI interface card requires a PCI slot on the computer; driver for PCI interface card only works with Windows NT/2000, Windows XP or Windows 7 32-bit. Older ISA interface card is not supported anymore.

10) – RS-232 only, onboard COM port or PCI/PCIe extension cards are recommended, USBtoCOM adapter and other adapters may not work; maximum data rate 0.5 Hz, A/D converter for higher data rates required; special RS-232 cable required (KNAUER part number G0743)

11) – RS-232 only, onboard COM port or PCI/PCIe extension cards are recommended, USBtoCOM adapter and other adapters may not work; special firmware version 0.90 required, feature set of RF-10 AXL only (1 channel only, no flow cell temperature control, no scan), maximum data rate 5 Hz via RS-232, A/D converter for higher data rates required; special RS-232 cable required (KNAUER part number G0743); detector sensitivity is lower compared with CBM-connection

12) – special RS-232 cable is required

13) – data rate limited to 10 Hz, driver has to be installed separately and is protected with a separate USB dongle, detector cannot be used for fractionation with KNAUER FRC option; KNAUER part number A2618-01

14) – data rate limited to 10 Hz, driver has to be installed separately and is protected with a separate USB dongle, detector cannot be used for fractionation with KNAUER FRC option; KNAUER part number A1513-07

15) – 4 channels, up to 50 Hz data rate

16) – 8 channels, up to 10 Hz; PurityChrom® offers only limited 3D functionality, refer to the PurityChrom® manual

17) – up to 2 Hz

18) – only one of these devices can be used in a system with PurityChrom® 5.x: RID 2.1L, CM 2.1S or Runge Mikron 81

19) – requires separate license, KNAUER part number A2618-02, detector cannot be used for fractionation with KNAUER FRC option

20) – requires separate license, KNAUER part number A1783-3

21) – requires separate license, KNAUER part number A1783-4

22) – for full functionality the KNAUER RS-232 Y-cable is required (KNAUER article number A0755)

23) – for acquiring 3D data (spectra) a 3D UV (PDA) license option is required.

24) – only one of these devices can be used in a system with PurityChrom®: IFU 2.1/IFU 2.1LAN, Sedex LC or RF-20A/Axs

25) – extended dynamic range for RID 2.1L is not supported in PurityChrom®

26) – the Shimadzu CDD-10Avp requires an A/D converter for data acquisition, device control is not possible

27) – in PurityChrom 5.x it is not possible to run UVD 2.1S, UVD 2.1L, MWD 2.1L and 50D in any combination; only one of these device types are allowed in a system (also more than one device of the same type)

28) – driver from Sedere, KNAUER part number A2618-12; minimum firmware requirements: Sedex 80LT: 1.4, Sedex 85LT: 2.8, Sedex 90LT: 1.0; driver registration at Sedere is required after installation; detector cannot be used for fractionation with KNAUER FRC option

29) – driver from Sedere, KNAUER part number A2618-13; minimum firmware requirements: Sedex 100LT: A.1.0, Sedex LC: A.1.1, Sedex FP: A.1.1; driver registration at Sedere is required after installation; detector cannot be used for fractionation with KNAUER FRC option

30) – driver from DataApex, recommended minimum software version ClarityChrom 7.4, bug in version 8.5 was fixed in 8.7; driver included in installer; minimum firmware requirements: Sedex 80LT: 1.3, Sedex 85LT: 2.7, Sedex 90LT: 1.0

31) – driver from DataApex, recommended minimum software version ClarityChrom 7.4, bug in version 8.5 was fixed in 8.7; driver included in installer; minimum firmware requirements: Sedex 100LT: A.1.0, Sedex LC: A.1.5, Sedex FP: A.1.5

32) – driver from Sedere, KNAUER part number A1783-4; requires timebase Class3 license; minimum firmware requirements: Sedex 80LT: 1.4, Sedex 85LT: 2.8, Sedex 90LT: 1.0; driver registration at Sedere is required after installation

33) – driver from Sedere, KNAUER part number A1783-5; requires timebase Class3 license; minimum firmware requirements: Sedex 100LT: A.1.0, Sedex LC: A.1.5, Sedex FP: A.1.5; driver registration at Sedere is required after installation

34) – requires timebase Class3 license, KNAUER part number A1783-7

35) – the required USB driver for the FLD 2.1L only works in 64-bit Windows operating systems and is not compatible with 32-bit Windows

Assistants (up to three devices in one housing) [1] **Included valves as fraction collector - see Fraction Collectors**	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
ASM 2.1L [1), 2)]	OLEE A.04.05 Driver 1017 [3)]	CC 3.0.7; Driver 3078 [4), 5), 6)]	Cm 7.3 scheduled Cm 7.2 Class 3 driver [8)]	CG 3.3.2; Driver 2825 [6)]	Version 6 R1 2 [9)] Version 5.07.039 [7), 9)]
ASM 2.2L [1), 2)]	OLEE A.04.06 Driver 2184 [10)]	CC 8.2.2; Driver 6036 [4), 6)]	Cm 7.3 scheduled Cm 7.2 Class 3 driver [8)]	n/a	Version 6 R1 2 [11)] Version 5.09.036 [7), 9)]

1) – configuration depends on order; refer the allowed configuration and restrictions in our FAQ (https://www.knauer.net/en/Support/FAQ/Assistants)

2) – only one LAN port for all devices

3) – only one valve as fraction collector, no cascading if controlled as ASM; all included modules also can be controlled as separate devices via IP port; FRC valve cascading only is possible if a valve in the ASM is configured as KNAUER MultiValve FC and is controlled as a separate device via IP port; more information about control as separate device via IP port in software manual

4) – ASM is only supported as complete Assistant; included modules cannot be controlled as separate devices (IP port separation is not supported)

5) – two pumps can be controlled either as HPG or as separate pumps from hotfix 5043, in older versions only as HPG
6) – only one valve as fraction collector, no cascading
7) – ASM is not supported as device; the included modules can be controlled as separate devices via IP port; only one valve as fraction collector
8) – ASM is not supported as device; the included modules can be controlled as separate devices via IP port; no valve as FRC
9) – ASM's Event Outs and Start In are not supported
10) – Modules of ASM 2.2L has to be configured as separate devices
11) - ASM's Error In and Start In as well as the leak sensor are supported from version PurityChrom® 6 R2 34

Autosamplers (one autosampler in a system)	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
AZURA® Autosampler AS 6.1L [1), 2)]	OLEE A.04.05 Driver 2109	CC 7.2.0.5043 [6)]	Cm 7.3 Class 3 driver [6)] (requires FW 1.17 or higher) Cm 7.2 Class 3 driver [6)] (requires FW 1.17 or higher)	n/a	Version 6 R2 2 Version 5.08.024 [10)]
Liquid Handler LH 8.1	n/a	CC 9.1.0 Driver 6149 [11)]	n/a	n/a	n/a
Liquid Handler LH 2.1 (can be used as an autosampler and fraction collector)	n/a	n/a	Cm 7.3 scheduled	n/a	Version 5.9.149
Smartline Autosampler 3950 [1), 2)]	OLEE A.04.05 Driver 1017	CC 2.4.4 / LAN from CC 2.6.5 Driver 1083 [6)]	Cm 7.2 Class 3 driver (requires FW 1.15 or higher) [6)]	CG 3.1.7 Driver 1466 / LAN from CG 3.3.1 Driver 1640 [8)]	Version 5.07.067 [10)]

Autosampler (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
PLATINblue Autosampler AS-1 [1), 2)]	OLEE A.04.05 Driver 1017	CC 6.1.0, Driver 5015	n/a	CG 3.3.2 PLATINblue Edition 1751 [8)]; Regular 2825 [8)]	n/a
Autosampler KNAUER Optimas	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3055 [3)]	n/a [9)]	n/a [7)]	Version 5.08.034
Smartline Autosampler 3800 (also WellChrom K-3800, Spark Basic Marathon)	n/a	CC 2.4.4 [3)]	n/a [4)]	CG 3.3.2 Driver 1787	Version 5.07.039
Smartline Autosampler 3900 (also Spark Midas)	n/a	CC2.4.4 [3)]	n/a [4)]	CG 2.8	Version 5.07.039
Spark Triathlon	n/a	CC 2.4.4 [3)]	n/a [4)]	CG 2.55	Version 5.07.039
Kontron Autosampler 360	n/a	CC 5.0.2 [3)]	-	CG 3.1.7 Driver 1466 [5)]	n/a
Kontron Autosampler 46x	n/a	-	-	CG 3.1.7 Driver 1466 [5)]	n/a
Kontron Autosampler 56x	n/a	CC 5.0.2 [3)]	-	CG 3.1.7 Driver 1466 [5)]	n/a

[1)] – some device features have been added from time to time; therefore, not all current features are supported in the software from beginning as well as not all autosampler firmware versions support it:

AS 6.1L
- FW 1.22 – additional control options for µl-pickup (currently not supported by drivers)
- FW 1.21 – 1000 µl syringe supported (only CC: 7.2.0.5043, PC: 5.9.149), User Defined Program supported (OLEE: driver 2197, CC: 8.7 driver 6076)
- FW 1.20 – no driver-dependent changes (extra needle dry step, other needle height during first transport aspiration)
- FW 1.19 – 100 µl syringe supported: OLEE: driver 2165, CC: 8.1 driver 6034, CG: AS 6.1L not supported, Cm: n/a, PC: 5.9.149
- FW 1.18 – 30 vial tray, 2500 µl syringe can be selected also if prep mode is not enabled: OLEE: driver 2143, CC: 7.4.2 driver 5066, CG: AS 6.1L not supported; Cm: 7.x driver 1056; PC: 5.9.149

- Advanced needle wash – requires FW 1.18: OLEE: driver 2158; CC: 8.1 driver 6018; CG: AS 6.1L not supported; Cm: not supported

AS3950
- FW 1.18 – 2500 µl syringe selectable also if prep mode is not active, 30 vials tray: OLEE: driver 4.2.0.2143; CC: 7.4, driver 5066; Cm: 7.x driver 1056; CG: n/a; PC: 05.09.028 – 2500 µl syringe; 5.09.069 - 30 vial tray; 30 vial tray selectable in prep mode: OLEE: 4.2.0.2159; CC: 8.0.1.6012; Cm: 7.x driver 1056; CG: n/a; PC: 5.09.069
- FW 1.16 – 108 vial tray (Q1 2017); drivers set also 250 µl syringe and 108 vial tray as default in new method: OLEE: driver 2109; CC: 7.2 driver 5045; Cm: 7.x driver 1038; CG: n/a; PC: 05.08.034
- FW 1.15 – 0.1 µl increments, tray thermostatted up to 40 ^{0}C (2014): OLEE: A.04.05 driver 1028; CC: 5.0.3 driver 4102, Cm: 7.x, driver 1024; CG: 3.3.2 driver 2846 (40 ^{0}C only); PC: 5.07.067
- FW 1.04 – 84+3 vial tray (Aug 2011): OLEE: driver 1017; CC: 3.0.7 driver 3055; Cm: 7.x driver 1024; CG: 3.3.2 driver 1787; PC: 5.07.067
- TCP/IP support (is required to control more than one autosampler in a network, devices sold from Q3 2016 with TCP by default, former devices can be switched to TCP): OLEE: driver 1017; CC: 6.1.0 driver 5028 (hotfix); Cm: 7.x driver 1024; CG: n/a (not supported); PC: 5.07.067 (UDP not supported)
- LAN connection (devices with LAN connector sold from 2009): OLEE: driver 1017; CC: 2.6.5 driver 1094; Cm: 7.x driver 1024; CG: 3.3.1 driver 1640; PC: 5.07.067

AS-1
- FW 1.03 – 500 µl syringe is supported
- FW 1.02 – Tray thermostatted up to 40 ^{0}C: OLEE: from first version; CC: 6.1.0 driver 5015; Cm: 6.8 only; CG: 3.3.2 driver 2846; PC: AS-1 not supported

[2] – LAN default configuration is LAN via DHCP, static IP address requires access to built-in LAN module via browser or ASM software
[3] – driver was developed by DataApex
[4] – upon request - driver was not developed by KNAUER
[5] – special RS-232 cable is required
[6] – no Stacked Injection supported
[7] – may run with Midas/AS3900 driver
[8] – in ChromGate TCP/IP communication is not supported, device has to be set to UDP; with UDP only one autosampler via LAN in the network can be controlled; later added features (see [1]) are not supported
[9] – generic driver for autosampler Spark Midas may work; upon request - driver was not developed by KNAUER
[10] – Stacked Injection supported from version 5.9.149
[11] – refer the ClarityChrom manual for supported options

Analog/Digital Converters	OpenLab® CDS EZChrom Edition CDS version and Driver Version [1]	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
KNAUER Interface Box IFU 2.1 LAN [2]	OLEE A.04.05 Driver 2092	CC 6.0.1 Driver 5043 (compatible with CC/CCP 5.x versions) [15]	n/a	n/a	Version 6 R1 2 [6] Version 5.08.024 [6]
KNAUER Interface Box IFU 2.1 [3], [4], [5]	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3078, in former version as IF2 [5], [15]	n/a	CG 3.3.2 Driver 2825, in former version as IF2 [5]	Version 5.07.039 [6]
KNAUER Interface Box IF2 [4]	OLEE A.04.05 Driver 1017	CC 2.4.4 / 2.6 [7], [8], [15]	n/a	CG 3.1 [9]	Version 5.07.039 [6]
Smartline Manager 5000 [4]	n/a	CC 2.4.4/2.6 [7], [8], [15]	n/a	CG 3.1 [9]	n/a
Smartline Manager 5050 [4]	OLEE A.04.05 Driver 1017	CC 2.6.5 Driver 1100 [5], [15]	n/a	CG 3.3.2 Driver 1751 [5]	n/a
KNAUER HPLC Box Model 96 [10]	n/a	CC 2.6 [11]	n/a	CG 2.55 [12], [13]	n/a
Kontron Interface Card [14]	n/a	-	-	CG 3.1.7 Driver 1466	n/a

[1] – A/D converter in OpenLab® EZChrom has to be configured separately; menu is available via *Start – Programs – Agilent Technologies – OpenLAB® CDS EZChrom Edition*, right click on *Agilent SS420X Interface Configuration* and select **Run as Administrator**

[2] – to set a static IP address a 3rd party tool is required

[3] – built-in USB-to-serial converter requires separate installation of a driver in Windows operating system, can be found on the HPLC software CD or KNAUER webpage (*Download* section for IFU 2.1, part number AZB00); check Windows Device Manager for the COM port number of the converter, this number has to be selected in the software configuration

[4] – as the required serial number in the configuration, enter the last 5 digits of the serial number on the label; if the first digit is a 0 (zero), only enter the last four digits

[5] – in previous software versions IFU 2.1 can be controlled as IF2 or Manager 5000 if IFU 2.1 is not listed in the module list

[6] – analog input only (for data acquisition), not in a system with Sedex LC or RF-20A/Axs in PurityChrom®

[7] – in ClarityChrom® version 2.4.4 only data acquisition via analog input is supported (max. 10 Hz), analog out supported from ClarityChrom® version 2.6

[8] – 50 Hz option for channel 1 supported from version ClarityChrom® version 2.6

[9] – 50 Hz option for channel 1 supported from version ChromGate® version 3.1.4

Thermostats/Column Ovens	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
Column Thermostat CT 2.1	OLEE A.04.05 Driver 1027	CC 5.0.3 driver 4102	Cm 7.3 Class 3 driver Cm 7.2 Class 3 driver	n/a	Version 6 R2 2 [5] Version 5.09.069 [4,5]
Support of modified CT 2.1 with S/N FCC...	OLEE A.04.06 Driver 2184	CC 8.2.3 driver 6042	Cm 7.3 Class 3 driver Cm 7.2 Class 3 driver	n/a	Version 6 R2 2 [5] Version 5.09.134 [5]
PLATINblue Column Thermostat T-1	OLEE A.04.05 Driver 1017	CC 5.0.2 Driver 4095	n/a	CG 3.3.2 PLATINblue Edition 1751; Regular 2825	n/a
Smartline Column Oven [2] / Column Thermostat JetStream [1,2] / PLATINblue T-1 Basic [2]	OLEE A.04.05 Driver 1017	CC 2.4.4	n/a	CG 3.1	Version 5.07.039 [4]

Thermostats/Column Ovens (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
Smartline Column Oven 4050 [3]	n/a	CC 2.4.4	n/a	CG 3.1.7 Driver 1466	n/a
Memmert UN 55 Oven	n/a	n/a	n/a	n/a	Version 5.09.069 [4]
Eluent heating device [6]	n/a	n/a	n/a	n/a	Version 6 R1 2 Version 5.08.035 [4]

[1] – firmware version b1.17 or higher for JetStream required
[2] – if connected, control panel has to show "Choose Function" before the instrument will be opened
[3] – device does not support static IP address, only LAN via DHCP from firmware version 1.11
[4] – in PurityChrom® version older than 5.09.134 only one thermostat or eluent heater is supported in one system
[5] – leak detector is not supported
[6] – separate software TempLogger for Standalone operation available

Electrical Valve Drives **Valves as fraction collector -> Fraction Collectors**	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
AZURA® Valve Unifier VU 4.1 [1]	OLEE A.04.05 Driver 2138	CC7.4.1 Driver 5066	Cm 7.3 Class 3 driver [2,3] Cm 7.2 Class 3 driver [2,3]	n/a [1]	Version 6 R1 2 Version 5.07.039
AZURA® Valve V 2.1S [1]	OLEE A.04.05 Driver 1017	CC 3.0.7 Driver 3078 [1]	Cm 7.3 Class 3 driver [2,3] Cm 7.2 Class 3 driver [2,3]	n/a [1]	Version 6 R1 2 Version 5.07.039

Electrical Valve Drives (continued) **Valves as fraction collector -> Fraction Collectors**	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
WellChrom electric valve drives K-6, K-12, K-16	n/a [4]	CC 2.4.4	n/a [3]	CG 2.8	Version 6 R1 2 Version 5.07.039
Smartline valve drives S6, S12, S16 [1]	OLEE A.04.05 Driver 1017	CC 2.4.4	n/a [3]	CG 3.1 [1]	Version 6 R1 2 Version 5.07.039
VICI Valco drives	OLEE A.04.05 Driver 1017	CC 5.0.2 [5]	Implemented (not by KNAUER)	Generic Driver [3]	Version 6 R1 2 Version 5.07.039 [6]

[1] – can be controlled as KNAUER switching valve if not listed in the module list of previous software versions (limited on RS-232 and only valve types available for V 2.1S)

[2] – generic driver for KNAUER switching valves will also work with AZURA® VU 4.1 (only for valve types available for V 2.1S, RS-232 only) and V 2.1S (RS-232 only), Cm 6.8 and 7.x

[3] – generic drivers do not support all of the device's features (e.g., RS-232 only, limited number of valve types)

[4] – can be controlled as KNAUER switching valve

[5] – driver was developed by DataApex

[6] – up to 8 valves supported in one system

Other Supported Instruments	OpenLab® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version	ChromGate® CDS version and Driver Version	PurityChrom® CDS and Driver version
Advion expressION-S CMS MS[1, 2]	n/a	ClarityChrom 5.0.3	n/a	n/a	n/a
Microsaic 4000 MiD Single Quad MS [1, 2]	n/a	ClarityChrom 7.4.1	-	n/a	Version 5.09.069
Airsensor [3]	n/a	n/a	n/a	n/a	Version 6 R1 2 Version 5.07.039
Pressure control (pressure difference) [4]	n/a	n/a	n/a	n/a	Version 6 R1 2 Version 5.07.039
Flowmeter GJC, Model 5025000 230V	OLEE A.04.05 Driver 1017	n/a	n/a	supported	n/a
Flowmeter Bronkhorst Mini Cori-Flow M12, M13, M14	OLEE A.04.05 Driver 1017	CC 8.1 driver 6018	n/a	supported	Version 6 R1 2 Version 5.09.028
AZURA pH Monitor pH 2.1S	n/a	ClarityChrom 9.0	n/a	n/a	Version 6 R1 2 Version 5.07.039
Ethernet Eventbox-Interface (digital inputs and outputs)	n/a	n/a	n/a	n/a	Version 6 R1 2 Version 5.09.149

[1] – driver was developed by DataApex
[2] – device control requires MS license
[3] – communication via game port adapter
[4] – sensors may require KNAUER IFU 2.1/ IFU 2.1 LAN, note the different models

Fraction Collectors (one fraction collector in a system, no combination of a fraction valve and a fraction collector possible; **except in PurityChrom 6**)	OpenLab® CDS EZChrom Edition CDS version and Driver version *)	ClarityChrom® CDS version and Driver version **), ***) [17]	Chromeleon™ CDS version, FRC license required	ChromGate® CDS version and Driver version, FRC license required	PurityChrom® CDS and Driver version (in Version 6 a fraction collector and fraction valve can be used in combination or as single devices)
KNAUER Valve as Fraction Collector (e.g. as „MultiValve FC", all KNAUER electric valve drives and AZURA® VU 4.1)	OLEE A.04.05 Driver 1017 [1]	CCP 2.6 [1, 2]	Cm 7.3 scheduled Cm 7.2 Class 3 driver; Refer Knauer FRC manual for Chromeleon	CG 3.1.6 Driver 423 [1]	Version 6 R1 2 Version 5.07.039 [3]
AZURA® ASM 2.2L valve	OLEE A.04.06 Driver 2184	CC 8.2.2 6036 [14]	Cm 7.3 scheduled	n/a	Version 6 R1 2 Version 5.09.036 [16]
AZURA® ASM 2.1L valve	A.04.05 Driver 1017 [13]	CCP 3.0.7 Driver 3078 [14]	Cm 7.3 scheduled	CG 3.3.2; Driver 2825 [15]	Version 6 R1 2 Version 5.07.039 [16]
AZURA® Fraction Collector FC 6.1	n/a	CC 9.1.0 Driver 6149	Cm 7.3 scheduled	n/a	Version 6 R2 20
Liquid Handler 2.1 (can be used as an autosampler and fraction collector)	n/a	n/a	Cm 7.3 scheduled	n/a	Version 5.9.149
Smartline Fraction Collector 3050 [4]	n/a	CCP 2.6	n/a	CG 3.3.1 Driver 1640	n/a
Buechi Fraction Collector C-684 [5]	n/a	n/a	n/a	CG 3.1.6 Driver 423	n/a

Fraction Collectors (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver version *)	ClarityChrom® CDS version and Driver version **), ***) [17]	Chromeleon™ CDS version, FRC license required	ChromGate® CDS version and Driver version, FRC license required	PurityChrom® CDS and Driver version
Buechi Fraction Collector C-660	OLEE A.04.05 Driver 1017	CCP 2.6	n/a	CG 3.1.6 Driver 423	n/a
ISCO Fraction Collector Foxy Jr.	n/a	CCP 2.6	Implemented (not by KNAUER)	CG 3.1.6 Driver 423	Version 5.07.039
ISCO Fraction Collector Foxy R1 [6]	OLEE A.04.05 Driver 1017 [7]	CCP 2.6.5 Driver 1094 (RS-232 only) [8] CC 7.4.2 hotfix 5075 **) also LAN	Cm 7.3 scheduled Cm 7.2 Implemented (not by KNAUER)	CG3.3.2 Driver 1751 [7]	Version 6 R1 2 Version 5.07.039
ISCO Fraction Collector Foxy R2 [6]	OLEE A.04.05 Driver 1017 [7]	CCP 2.6.5 Driver 1094 (RS-232 only) [8] CC 7.4.2 hotfix 5075 **) also LAN	Cm 7.3 scheduled n/a [20]	CG3.3.2 Driver 1751 [7]	Version 6 R1 2 Version 5.07.039
ISCO Fraction Collector Foxy 200 [9]	n/a	CCP 2.6 and CCP 2.6.5 Driver 1100 [9]	Implemented	CG 3.1.7 Driver 1466 – CG3.3.2 Driver 1751 [9]	n/a
Virtual Fraction Collector	OLEE A.04.05 Driver 1017	CCP 2.6	n/a	CG 3.1.6 Driver 423	n/a
Labocol Vario 2000 Fraction Collector	OLEE A.04.05 Driver 1017	n/a	n/a	CG 3.1.6 Driver 423	Version 5.07.039

Fraction Collectors (continued)	OpenLab® CDS EZChrom Edition CDS version and Driver version *)	ClarityChrom® CDS version and Driver version **), ***) [17]	Chromeleon™ CDS version, FRC license required	ChromGate® CDS version and Driver version, FRC license required	PurityChrom® CDS and Driver version
Labocol Vario 4000 Fraction Collector [6]	OLEE A.01.05 / A.04.05 Driver 1017 (RS-232 only) OLEE A.04.06 Driver 2155 *) [18] also LAN; only fixed rack types	CC 7.4.2 Driver 5075 (hotfix) [19] only fixed rack types	-	CG 3.3.1 Driver 1640 (RS-232 only)	Version 6 R1 2 [21] Version 5.07.039 [21]
Labocol Vario 4000 Plus Fraction Collector [6]	OLEE A.04.06 Driver 2155 *) [18] only fixed rack types	CC 7.4.2 Driver 5075 (hotfix) [19] only fixed rack types	-	n/a	Version 6 R1 2 [21] Version 5.07.039 [21]
VICI Valco valve as VICI MultiValve Fraction Collector	OLEE A.04.05 Driver 1017 [1]	n/a from KNAUER, in ASM 2.1L as FC [3,10] valve as FC is supported by DataApex [11]	n/a	CG 3.3.1 Driver 1640 [1]	Version 6 R1 2 Version 5.07.039 [3]
Injection Module (combined module with pump and injection valve for injection of large injection volumes, allows for stacked injection) [12]	OLEE A.04.05 Driver 1017	n/a	n/a	CG 3.3.1 Driver 1640	Version 6 R1 2 Version 5.07.039

*) – Due to changes in OpenLab EZChrom by Agilent, the KNAUER FRC AddOn needed to be adjusted and is not compatible to OpenLab EZChrom A.01.05 / A.04.05 from driver package version 2146. All later added functionality, and drivers are not available for OpenLab EZChrom A.01.05 / A.04.05.

**) –From version 7.2., the ClarityChrom® *Prep* as a separate software is discontinued. The full functionality in later versions is available in ClarityChrom® with the special Knauer FRC control. If an upgrade of ClarityChrom® *Prep* is required, a ClarityChrom with Knauer FRC control will be delivered (new User Code).

***) – The listed fraction collectors are supported in the KNAUER FRC module for ClarityChrom® (from version 7.4.2) or in former ClarityChrom® *Prep*. DataApex supports fraction collection with an own implementation without a separate license; it is available in ClarityChrom® as well as ClarityChrom® *Prep*.

1) – up to 32 valves in a cascade
2) – VU 4.1 as MultiValve FC fully supported from CC 7.4.1.5066, in previous versions as V 2.1S RS-232 only
3) – only one valve in PurityChrom® 5 can be used as fraction collector, no cascading is supported
4) – switch between RS-232 and LAN with a switch on the devices rear panel
5) – requires special relay module for serial communication
6) – touch panel is not blocked in remote, do not touch it while the device is under software control
7) – LAN control from firmware version 1.01.03, LAN control support in firmware versions 1.01.09 and 1.01.11 faulty
8) – from CCP 2.6.5 1094 only RS-232 support, from 7.4.2 hotfix 5075 also LAN control
9) – support is discontinued due to several incompatible firmware versions; not all devices may work with the driver
10) – not all available valve types can be built-in into ASM 2.+1L
11) – driver from DataApex available; does not support KNAUER fractionation features
12) – several pumps were added to the module when released; however, a pump is only supported in the injection module if the mentioned pump is also available as a separate pump; in ASM 2.1L pump and valve has to be controlled separately, refer software manual for detailed information
13) – only one valve as fraction collector, no cascading if controlled as ASM; FRC valve cascading only is possible if a valve in the ASM is configured as KNAUER MultiValve FC and is controlled as separate device via IP port; more information about control as separate device via IP port in software manual
14) – only one valve as fraction collector in ASM, no cascading
15) – only one valve as fraction collector, no cascading if controlled as ASM; FRC valve cascading only is possible if a valve in the ASM is configured as KNAUER MultiValve FC and is controlled as separate device via IP port
16) – only one valve as fraction collector, no cascading
17) – DataApex supports fraction collection with an own implementation; it is available in ClarityChrom® as well as ClarityChrom® *Prep*. KNAUER FRC option is available in ClarityChrom® *Prep* and, from version 7.4.1, also in ClarityChrom® with Knauer FRC license
18) – from driver version 2155, additionally model 4000 Plus, LAN control and trays with 24 and 39 vials are supported, now trays with 20, 24, 39, 80 and 125 vials are available, free tray definition is not supported; all racks must have same type (no mixed configuration supported); no USB control support; former drivers only support model 4000, RS-232 control and trays with 20, 80 and 125 vials
19) – only trays with 20, 24, 39, 80 and 125 vials are supported; free tray definition is not supported; all racks must have same type (no mixed rack configuration supported); no USB control support
20) – generic driver should also work with Cm 7, generic drivers do not support all of the device's features (e.g. RS-232 only)
21) - RS-232 and LAN control, free rack definition supported, mixed rack configuration supported, no USB control

Mobile Control (KNAUER)

Mobile Control requires minimum device firmware versions, which may differ between the Mobile Control versions. Refer to the list of supported devices and their required **minimum** firmware version below. A Mobile Control update may also require firmware updates of the controlled devices. Mobile Control download comes with a Firmware Wizard, which allows for firmware updates. The **Monitor Mode** is no longer supported for technical reasons. Please refer to the Mobile Control page for supported features and other information: https://www.knauer.net/en/Systems-Solutions/Software_solutions/Mobile-Control?lswitch=en

Mobile Control, Version 6.0.4 also with data acquisition support, supports the following devices:

- Pump P 2.1S/P 4.1S – Firmware V01.38
- Pump P 6.1L – Firmware V01.07
- Pump P 8.1L – Firmware V01.01
- Pump P 2.1L – Firmware V01.09
- Pump 80P APD30XX, APD60XX – Firmware V02.26
- Pump 80P APD20XX – Firmware V01.08
- Pump 40P APC30XX - Firmware V01.12
- Pump 40P APC40XX, APC60XX – Firmware V02.30
- Detector UVD 2.1S – Firmware V01.14
- Detector UVD 2.1L – Firmware V02.06

- Detector MWD 2.1L – Firmware V01.12
- Detector DAD 2.1L* – Firmware V01.12
- Detector DAD 6.1L* – Firmware V01.26
- Detector RID 2.1L – Firmware V01.24
- Detector 40D ADI01, ADI04 – Firmware V02.05
- Detector 50D ADJ01, ADJ11 – Firmware V02.18
- Valve V 2.1S – Firmware V05.01
- VU 4.1 – Firmware V05.68
- Assistant ASM 2.1L – Firmware V01.18
- Assistant ASM 2.2L – Firmware V01.14

- Column thermostat CT 2.1 – Firmware V01.06/V02.02
- Autosampler AS 3950 – Firmware V01.17
- Autosampler AS 6.1L – Firmware V01.22
- IFU 2.1 LAN – Firmware V1.05
- Fraction Collector Foxy R1/R2** – Firmware V01.01.11
- Fraction Collector Vario-4000/Plus** – Firmware V01.25

* - no 3D data acquisition, 4 channels only
** - only one rack type is supported by device; racks of different type cannot be combined in one device
X = A-Z

The **Monitor Mode** is no longer supported in OpenLab EZChrom® and ClarityChrom®.

Chromeleon 6.8 (Dionex/Thermo)
Note that Chromeleon 6.8 was discontinued. Chromeleon 6.8 supports regular drivers (class 3 license required) which allow the support of the full device functionality, and generic drivers with limited functionality. Refer existing superscripts for information about limitations.

Pumps
AZURA® Pump P 2.1L – Generic driver only [1]
AZURA® Pump P 2.1S/P 4.1S – Generic driver only [1]
PLATINblue Pump P-1 – Cm 6.8 SR10 Class 3 driver [2]
Smartline Pump 1050 – Cm 6.8 SR10 Class 3 driver [2]
Smartline Pump 1000 – Generic driver only [1]
Smartline Pump 100 – Generic driver only [1]
BlueShadow Pumps 10P/20P – Generic driver only [1]
BlueShadow Pumps 80P – Generic driver only [1]

Detectors
AZURA® Detector UVD 2.1L – Generic driver only [3]
PLATINblue Detector MW-1 – Cm 6.8 SR10 Class 3 driver [2]
PLATINblue DAD PDA-1 – Cm 6.8 SR10 Class 3 driver [2]
Smartline UV Detector 2500 – Generic driver only [3]
Smartline UV Detector 2550 – Cm 6.8 SR10 Class 3 driver [2]
Smartline UV Detector 2600 – Generic driver only [3]
WellChrom UV Detector K-2600 – Generic driver only [3]
Antec Leyden LC-EC Detector Decade – Cm 6.8 Class 3 driver (driver not developed by KNAUER) [2]

Autosamplers
Smartline Autosampler 3950 – Cm 6.8 SR10 Class 3 driver [2]
PLATINblue Autosampler AS-1 – Cm 6.8 SR10 Class 3 driver [2]
Smartline Autosampler 3800 (also WellChrom K-3800, Spark Basic Marathon) – Generic driver only (driver not developed by KNAUER) [1]
Smartline Autosampler 3900 (also Spark Midas) – Generic driver only (driver not developed by KNAUER) [1]
Spark Triathlon – Generic driver only (driver not developed by KNAUER) [1]

Thermostats/Column Ovens
PLATINblue Column Thermostat T-1 – Cm 6.8 SR10 Class 3 driver [4]
Smartline Column Oven [4] / Column Thermostat JetStream [4,5] / PLATINblue T-1 Basic - Cm 6.8 SR10 Class 3 driver [4]

<u>Valves</u>
WellChrom electric valve drives K-6, K-12, K-16 – Generic driver only [6]
Smartline valve drives S6, S12, S16 – Generic driver only [6]
VICI Valco drives – Implemented (driver not developed by KNAUER) [2]

<u>Fraction Collectors</u>
ISCO Fraction Collector Foxy Jr/Foxy R1/Foxy 200 – Implemented (driver not developed by KNAUER) [2]
ISCO Fraction Collector Foxy R2 – CM 6.8 Generic driver only [7]

[1]   – generic drivers do not support all device features (e. g. no Isobar Mode); only control via RS-232
[2]   – requires Chromeleon 6.8 Class 3 license
[3]   – generic drivers do not support all device features; only control via RS-232, **data acquisition requires A/D converter**, no KNAUER A/D converter is supported
[4]   - if connected, control panel has to show "Choose Function" before the instrument will be opened
[5]   - firmware version b1.17 or higher for JetStream required
[6]   – generic drivers do not support all of the device's features (e.g., RS-232 only, limited number of valve types)
[7]   - generic drivers do not support all of the device's features (e.g., RS-232 only)

EuroChrom for Windows 3.05 (KNAUER)
Note that EuroChrom was discontinued in 2008. It will not run on Windows systems newer than Windows XP. Fraction collectors are supported exclusively in EuroChrom Prep software.

Pumps
Smartline Pump 1000, Preparative Pump 1800, WellChrom K-1800, WellChrom K-1001, K-1000, K-501, K-120 (Smartline 100 as K-120 only via RS-232 without pressure sensor),
Feed Delivery (ECW Prep only): pump K-501, K-120

Detectors
Smartline UV Detector 2500, Smartline RI Detectors 2300 / 2400, Smartline DAD 2800 (PCI/LAN), WellChrom UV Detectors K-2000/2001, K-2500/2501, K-2600, K-200, WellChrom RI Detectors K-2301/2401, WellChrom DAD K-2700 (PCI/LAN), WellChrom DAD K-2800 (PCI/LAN), Virtual Detector
(WellChrom detectors 2xx0 allow only data acquisition, no control)

Autosamplers
AS 3800 / Spark Basic Marathon, AS 3900 / Spark Midas, Spark Triathlon

Analog/Digital Converters
KNAUER IF2 (also IFU 2.1 with built-in USBtoCOM converter), Smartline Manager 5000, KNAUER HPLC Box (Model 96)

Thermostats/Column Ovens
JetStream (FW b1.17 or later required)

Valves
KNAUER WellChrom K-6 / K-12 / K-16 [Smartline S 6 / S 12 / S 16 and AZURA® V 2.1S and VU 4.1 (only 2, 6, 12, 16 port valves) are compatible via RS-232],
Solvent Recycling: K-6 / K16

Fraction Collectors (ECW Prep 3.05 only)
Labocol Vario 2000, ISCO Foxy Jr, KNAUER WellChrom K-6 / K-12 / K-16 (also cascade up to 8 valves), Buechi 684 via short circuits, User Defined FC (via short circuits)

Other Software

OpenLab CDS (Agilent) – drivers for KNAUER AZURA® coming soon

OpenLab CDS ChemStation Edition (Agilent) – no drivers from KNAUER are available

LabVIEW (National Instruments) – <u>support is discontinued</u>, may not work with LabVIEW versions higher than 2011
Driver for AZURA® Pumps P 2.1S / P 4.1S, Smartline 100, BlueShadow Pumps 10P / 20P

HyStar™ (Bruker)
Compass HyStar™ 3.2 Plug-in: Drivers for PLATINblue system (Pump P-1, DAD PDA-1, UV Detector MW-1, Column Thermostat T-1, Autosampler AS-1, Manager M-1 (LPG valves only, interface module is not supported)
Compass HyStar™ 4 Plug-in: Driver for AZURA® DAD 6.1L

Xcalibur™ (Thermo)
Version 2.0.7 and 2.1: Driver for PLATINblue Pump P-1, UV Detector MW-1, DAD PDA-1, Autosampler AS-1, Column Thermostat T-1 and T-1 Basic and Smartline Pump S 1050, UV Detector S 2550, Autosampler S 3950 and Column Thermostat JetStream

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