

Device support in KNAUER CDS / KNAUER device support in 3rd party software OpenLAB[®] CDS EZChrom Edition / ClarityChrom[®] / Chromeleon[™] / ChromGate[®] / PurityChrom[®]

The tables list the software package and driver version (in case multiple versions exist); the version number listed is the **first version** that supports the respective device. **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 by different communication ports, for most devices the desired port must be selected in the device directly. From version 7.4.1, ClarityChrom[®] *Prep* is discontinued; all its prep-functionality is available in ClarityChrom[®] 7.4.1 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. Complete ChromGate[®] was discontinued in 2013. OpenLAB[®] CDS EZChrom Edition version number lists Shared Service version and EZChrom version. KNAUER **OEM** devices are **not** supported by the KNAUER drivers. At the end of the document other software packages, e.g. KNAUER Mobile Control, are listed.

Table of contents

Pumps	2	Mobile Control	16
Detectors	4	Version 5.3.0	16
Assistant	9	Version 4.0.0	17
Autosamplers	10	Version 3.0.1	17
Analog/Digital Converters	11	Version 2.2.0	18
Thermostats/Column Ovens	12	EuroChrom for Windows 3.05	18
Electrical Valve Drives	13	Other Software	19
Other Supported Instruments	13	LabVIEW	19
Fraction Collectors	14	HyStar [™]	19
		Xcalibur [™]	19

Pumps	OpenLAB® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
AZURA® Pump P 6.1L	OLEE A.01.05 / A.04.05 Driver 1022	CC 5.0.2 Driver 4095 ¹⁾	Cm 7.2 Regular Class 3 driver ¹⁾	n/a	Version: 5.07.039 ¹⁾
AZURA® Pump P 2.1L	OLEE A.01.05 / A.04.05 Driver 1017	CC 3.0.7 Driver 3078 ¹⁾	Cm 7.2 Regular Class 3 driver ¹⁾ Cm 6.8 Generic driver ²⁾	CG 3.3.2 Driver 2825 ³⁾	Version: 5.07.039 ¹⁾
AZURA® Pump P 2.1S/P 4.1S ⁶⁾	OLEE A.01.05 / A.04.05 Driver 1017	CC 3.0.7 Driver 3078	Cm 6.8 Generic driver ²⁾	CG 3.3.2 Driver 1787	Version: 5.07.039
PLATINblue Pump P-1	OLEE A.01.05 / A.04.05 Driver 1017	CC 5.0.3 Driver 4102	Cm 6.8 SR10 Regular Class 3 driver	CG 3.3.2 PLATINblue Edition 1751; Regular 2825	n/a
Smartline Pump 1050 ⁴⁾	OLEE A.01.05 / A.04.05 Driver 1017	CC 2.6.5 Driver 1100	Cm 6.8 SR10 Regular Class 3 driver	CG 3.3.2 Driver 1751	Version: 5.07.039
Smartline Pump 1000	n/a	CC 2.4.4	Cm 6.8 Generic driver ²⁾	CG 3.1	Version: 5.07.039
Smartline Pump 100 ^{5), 6)}	OLEE A.01.05 / A.04.05 Driver 1017	CC 2.6	Cm 6.8 Generic driver ²⁾	CG 3.3.1 Driver 1640	Version: 5.07.039
Preparative Pump 1800 (also WellChrom K-1800)	n/a	CC 2.6	n/a	CG 3.1	Version: 5.07.039
WellChrom Pump K-1001	n/a	CC 2.6	n/a	CG 2.55 ⁷⁾	Version: 5.07.039
WellChrom Pump K-1000	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.01.05 / A.04.05 Driver 1017	CC 3.0.7 Driver 3078	Cm 6.8 Generic driver ²⁾	CG 3.3.2 Driver 1787	Version: 5.07.039

BlueShadow Pump 40P ¹⁰⁾	OLEE A.01.05 / A.04.05 Driver 1022	CC 5.0.2 Driver 4095	n/a	n/a	Version: 5.07.039
BlueShadow Pump 80P ¹⁰⁾	OLEE A.01.05 / A.04.05 Driver 1022	CC 5.0.2 Driver 4095	Cm 6.8 Generic driver ²⁾	n/a	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 of the devices 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 must 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
- 10) - supported from Clarity version 4.X
- 11) - driver was developed by Data Apex
- 12) - special RS-232 cable is required

Detectors [for all PDA or scanning UV detectors the 3D 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 Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
AZURA® Detector UVD 2.1L ¹⁾	OLEE A.01.05 / A.04.05 Driver 1017	CC 3.0.7 Driver 3078	Cm 7.2 Regular Class 3 driver Cm 6.8 Generic driver ⁵⁾	CG 3.3.2 Driver 2825	Version: 5.08.034
AZURA® Detector MWD 2.1L	OLEE A.01.05 / A.04.05 driver 2068	CC 5.0.5 Driver 5011	Cm 7.2 Regular Class 3 driver	n/a	Version: 5.07.067 ¹⁵⁾
AZURA® Detector UVD 2.1S ²⁾	OLEE A.01.05 / A.04.05 Driver 1017	CC 3.0.7 Driver 3055	n/a	CG 3.3.2 Driver 1787	Version: 5.07.039
AZURA® Detector DAD 6.1L	OLEE A.01.05 / A.04.05 driver 2047	CC 5.0.5 Driver 4110	Cm 7.2 Regular Class 3 driver	n/a	Version: 5.07.102 ¹⁶⁾
AZURA® Detector DAD 2.1L	OLEE A.01.05 / A.04.05 driver 2068	CC 5.0.5 Driver 5011	Cm 7.2 Regular Class 3 driver	n/a	Version: 5.07.102 ¹⁶⁾
AZURA® Detector RID 2.1L / RID 2.1L Highflow	OLEE A.01.05 / A.04.05 Driver 2092	CC 6.0.1 Driver 5037 (compatible with CC/CCP 5.x versions)	Cm 7.2 Regular Class 3 driver	n/a	Version: 5.08.024 ¹⁷⁾
AZURA® Conductivity Monitor CM 2.1S ²⁾	OLEE A.01.05 / A.04.05 driver 1022	CC 5.0.2 Driver 4095	n/a	Generic Driver June 2013 ⁵⁾	Version: 5.07.039 ¹⁸⁾
PLATINblue Detector MW-1 ³⁾	OLEE A.01.05 / A.04.05 Driver 1017	CC6.1.0; Driver 5015	Cm 6.8 SR10 Regular Class 3 driver	CG 3.3.2 PLATINblue Edition 1751; Regular 2825	n/a
PLATINblue DAD PDA-1	OLEE A.01.05 / A.04.05 Driver 1017	CC 5.0.2 Driver 4095 ⁴⁾	Cm 6.8 SR10 Regular Class 3 driver	CG 3.3.2; PLATINblue Edition 1751; Regular 2825	n/a
Smartline UV Detector 2500 ⁶⁾	n/a	CC 2.4.4	Cm 6.8 Generic driver ⁵⁾	CG 3.1	Version: 5.07.039

Detectors [for all PDA or scanning UV detectors the 3D 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 Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
Smartline UV Detector 2520 ^{3), 7)}	OLEE A.01.05 / 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)}	OLEE A.01.05 / A.04.05 Driver 1017	CC 2.6.5 Driver 1079	Cm 6.8 SR10 Regular Class 3 driver	CG 3.3.1 Driver 1640	n/a
Smartline UV Detector 2600	OLEE A.01.05 / A.04.05 Driver 1017	CC 2.4.4	Cm 6.8 Generic driver 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⁾	n/a	CC 2.4.4	n/a	CG 3.1.7 Driver 446	Version: 5.07.039
Smartline PDA Detector 2850	OLEE A.01.05 / 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.01.05 / A.04.05 Driver 1017	CC 2.4.4	n/a	CG 3.1	n/a
Smartline RI Detector 2400	OLEE A.01.05 / A.04.05 Driver 1017	CC 2.4.4	n/a	CG 3.1	n/a
Smartline Conductivity Monitor S2900	OLEE A.01.05 / 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	

Detectors [for all PDA or scanning UV detectors the 3D 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 Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
WellChrom UV Detector K-2600	OLEE A.01.05 / A.04.05 Driver 2026	CC 2.6	Cm 6.8 Generic driver ⁵⁾	CG 2.55	n/a
WellChrom PDA Detector K-2700 ⁹⁾	n/a	PCI / LAN (PCI card driver supports up to Windows 7 32-bit)	n/a	CG 2.55, LAN from 3.1	n/a
WellChrom PDA Detector K-2800 ⁹⁾	n/a	PCI / LAN (PCI card driver supports up to Windows 7 32-bit)	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-10AxI ¹⁰⁾	n/a	CC 2.6	n/a	CG 3.1	n/a
Shimadzu fluorescence detector RF-20A serial control with special firmware version 0.90 only from KNAUER (limited functionality) ¹¹⁾	OLEE A.01.05 / A.04.05 Driver 1017	CC 3.0.7 Driver 3055	n/a	CG 3.3.2; Driver 1787	Version: 5.08.024
Shimadzu fluorescence detector RF-20A/Axs with CBM-20A	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 Data Apex	Cm 7.2 with official Shimadzu driver; requires special license, driver not developed by KNAUER ²⁰⁾	n/a	n/a
Virtual Detector	OLEE A.01.05 / 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.01.05 / A.04.05 Driver 1017	CC 3.0.7 Driver 3055	n/a	CG 3.3.2 Driver 1787	Version: 5.07.039

Detectors [for all PDA or scanning UV detectors the 3D 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 Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
BlueShadow Detector 40D ^{3), 7}	OLEE A.01.05 / A.04.05 driver 1022	CC 5.0.2 Driver 4095	n/a	n/a	n/a
BlueShadow Detector 50D ^{3), 7}	OLEE A.01.05 / A.04.05 driver 1022	CC 5.0.2 Driver 4095	n/a	n/a	n/a
Antec Leyden LC-EC Detector Decade	n/a	supported by Data Apex; CC 5.0.2	Cm 6.8 (driver not developed by KNAUER)	n/a	Version: 5.07.039
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⁾	n/a	supported by DataApex; CC 5.0.2	-	CG 3.1.7 Driver 1466	n/a
Sedere Sedex ELSD 80/85LT	supported, driver was developed by MayLab Analytical ¹³⁾	supported by DataApex; CC 3.0.5	Chromeleon™ 7.2: 85LT supported from FW 2.7, requires Class 3 license (driver not developed by KNAUER)	supported, driver was developed by MayLab Analytical ¹⁴⁾	n/a
Sedere Sedex ELSD 90LT	supported, driver was developed by MayLab Analytical ¹³⁾	supported by DataApex; CC 5.0.2	Chromeleon™ 7.2: from FW 1.0, requires Class 3 license (driver not developed by KNAUER)	supported, driver was developed by MayLab Analytical ¹⁴⁾	n/a

Sedere Sedex ELSD 100LT	supported, driver was developed by MayLab Analytical ¹³⁾	supported by DataApex; CC 5.0.2	Chromeleon™ 7.2: requires Class 3 license (driver not developed by KNAUER)	n/a	n/a
Sedere Sedex LC	supported, driver was developed by MayLab Analytical ¹³⁾	supported by DataApex; CC 5.0.2	Chromeleon™ 7.2: from FW A.1.5, requires Class 3 license (driver not developed by KNAUER)	n/a	Version: 5.07.039
ERC RefractoMax 520 series	n/a	supported by DataApex; CC 6.1.0, RS-232	Supported in Cm 7.2 (driver not developed by KNAUER)	n/a	n/a
Antec Decade II	n/a	supported by DataApex; CC 5.x, RS-232	n/a	n/a	n/a
Antec Decade Elite	n/a	supported by DataApex; CC 5.X, USB, LAN	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	-

- 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 of the devices 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 wave length 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, 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, 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, A/D converter for higher data rates required; special RS-232 cable required (KNAUER part number G0743)
- 12) - special RS-232 cable is required
- 13) - driver must 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) - driver must 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, not in a system with CM 2.1S (only RID 2.1L or CM2.1S in a system with PurityChrom® is allowed)
- 18) - not in a system with RID 2.1L (only CM2.1S or RID 2.1L in a system with PurityChrom® is allowed)
- 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

Assistant (up to three devices in one housing) ¹⁾	OpenLAB® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
ASM 2.1L ^{1), 2)}	OLEE A.01.05 / A.04.05 Driver 1017 ³⁾	CC 3.0.7; Driver 3078 ^{4) 5)}	n/a	CG 3.3.2; Driver 2825 ⁵⁾	Version: 5.07.039 ⁶⁾

- 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 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) - only one valve as fraction collector, no cascading
- 6) - ASM is not supported as device; the included modules can be controlled as separate devices via IP port; only one valve as fraction collector

Autosamplers (one autosampler in a system)	OpenLAB® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
AZURA® Autosampler AS 6.1L	OLEE A.01.05 / A.04.05 Driver 2109	CC 7.2.0.5043	Cm 7.2 Regular Class 3 driver	n/a	Version: 5.08.024
Smartline Autosampler 3950 ¹⁾	OLEE A.01.05 / A.04.05 Driver 1017	CC 2.4.4 / LAN from CC 2.6.5 Driver 1083 ⁶⁾	Cm 7.2 Regular Class 3 driver Cm 6.8 SR10 Regular Class 3 driver ⁶⁾	CG 3.1.7 Driver 1466 / LAN from CG 3.3.1 Driver 1640	Version: 5.07.067 ⁶⁾
PLATINblue Autosampler AS-1	OLEE A.01.05 / A.04.05 Driver 1017	CC 6.1.0, Driver 5015	Cm 6.8 SR10 Regular Class 3 driver	CG 3.3.2 PLATINblue Edition 1751; Regular 2825	n/a
Autosampler KNAUER Optimas	OLEE A.01.05 / A.04.05 Driver 1017	CC 3.0.7 Driver 3055 ³⁾	n/a	n/a ⁷⁾	Version: 5.08.034
Smartline Autosampler 3800 (also WellChrom K-3800, Spark Basic Marathon)	n/a	CC 2.4.4 ³⁾	Cm 6.8; Generic driver ⁴⁾	CG 3.3.2 Driver 1787	Version: 5.07.039
Smartline Autosampler 3900 (also Spark Midas)	n/a	CC 2.4.4 ³⁾	Cm 6.8; Generic driver ⁴⁾	CG 2.8	Version: 5.07.039
Spark Triathlon	n/a	CC 2.4.4 ³⁾	Cm 6.8; Generic driver 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 of the current features are supported in the software from beginning (as LAN connection, TCP/IP support, 84+3 vial tray, 108 vial tray, thermostating up to 40 °C, 0.1 µl increments for injection volume and smallest injection volume); the features require a device with the appropriate firmware and hardware version
- ²⁾ - LAN default configuration is LAN via DHCP, static IP address requires access to built-in LAN module
- ³⁾ - driver was developed by Data Apex
- 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

Analog/Digital Converters	OpenLAB® CDS EZChrom Edition CDS version and Driver Version ¹⁾	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
KNAUER Interface Box IFU 2.1 LAN ²⁾	OLEE A.01.05 / A.04.05 Driver 2092	CC 6.0.1 Driver 5043 (compatible with CC/CCP 5.x versions)	n/a	n/a	Version: 5.08.024 ⁶⁾
KNAUER Interface Box IFU 2.1 ^{3), 4), 5)}	OLEE A.01.05 / A.04.05 Driver 1017	CC 3.0.7 Driver 3078, in former version as IF2 ⁵⁾	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.01.05 / A.04.05 Driver 1017	CC 2.4.4 / 2.6 ^{7), 8)}	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)}	n/a	CG 3.1 ⁹⁾	n/a
Smartline Manager 5050 ⁴⁾	OLEE A.01.05 / A.04.05 Driver 1017	CC 2.6.5 Driver 1100 ⁵⁾	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® must be configured separately; menu is available via *Start - Programs - Agilent Technologies - OpenLAB® CDS EZChrom Edition*, right click on *Agilent 55420X 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, Article Number AZB00); check Windows Device Manager for the COM port number of the converter, this number must 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
- 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

- 10) - as the required serial number in the configuration, enter the last 5 digits of the serial number on the label, if the serial number is higher than 40000, please enter only the last four digits
- 11) - supported as "Basic Edition", ClarityChrom® will switch the box into the required mode
- 12) - supported as "Integration Box" only for data acquisition via analog input; box must be switched into the correct mode with special software
- 13) - 100 Hz option for channel 1 supported from version ChromGate® version 3.1
- 14) - requires an ISA slot on the computer; is not supported under Windows 7

Thermostats/Column Ovens	OpenLAB® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromleon™ CDS version Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
Column Thermostat CT 2.1	OLEE A.01.05 / A.04.05 Driver 1027	CC 5.0.3 driver 4102	Cm 7.2 Regular Class 3 driver	n/a	n/a
PLATINblue Column Thermostat T-1	OLEE A.01.05 / A.04.05 Driver 1017	CC 5.0.2 Driver 4095	Cm 6.8 SR10 Regular Class 3 driver	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.01.05 / A.04.05 Driver 1017	CC 2.4.4	Cm 6.8 SR10 Regular Class 3 driver	CG 3.1	Version: 5.07.039
Smartline Column Oven 4050 ³⁾	n/a	CC 2.4.4	n/a	CG 3.1.7 Driver 1466	n/a

- 1) - firmware version b1.17 or higher for JetStream required
- 2) - if connected, control panel must 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

Electrical Valve Drives	OpenLAB® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
AZURA® Valve V 2.1S ¹⁾	OLEE A.01.05 / A.04.05 Driver 1017	CC 3.0.7 Driver 3078 ¹⁾	n/a ^{2), 3)}	n/a ¹⁾	Version: 5.07.039
WellChrom electric valve drives K-6, K-12, K-16	n/a ⁴⁾	CC 2.4.4	CM 6.8 Generic driver ³⁾	CG 2.8	Version: 5.07.039
Smartline valve drives S6, S12, S16 ¹⁾	OLEE A.01.05 / A.04.05 Driver 1017	CC 2.4.4	CM 6.8 Generic driver ³⁾	CG 3.1 ¹⁾	Version: 5.07.039
VICI Valco drives	OLEE A.01.05 / A.04.05 Driver 1017	CC 5.0.2 ⁵⁾	Implemented (not by KNAUER)	Generic Driver ³⁾	-

¹⁾ - can be controlled as KNAUER switching valve if not listed in the module list of previous software versions (maybe limited on RS-232)

²⁾ - generic driver for KNAUER switching valves will also work with AZURA® V 2.1S (RS-232 only)

³⁾ - generic drivers do not support all of the devices features (e.g. RS-232 only)

⁴⁾ - can be controlled as KNAUER switching valve

⁵⁾ - driver was developed by Data Apex

Other Supported Instruments	OpenLAB® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version	Chromeleon™ CDS version Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
Airsensor ¹⁾	n/a	n/a	n/a	n/a	Version: 5.07.039
Pressure control (pressure difference) ²⁾	n/a	n/a	n/a	n/a	Version: 5.07.039
Flowmeter GJC, Model 5025000 230V	OLEE A.01.05 / A.04.05 Driver 1017	n/a	n/a	supported	n/a
Flowmeter Bronkhorst Mini Cori-Flow M12, M13, M14	OLEE A.01.05 / A.04.05 Driver 1017	n/a	n/a	supported	n/a

¹⁾ - communication via game port adapter

²⁾ - requires KNAUER IFU 2.1/ IFU 2.1 LAN

Fraction Collectors (one fraction collector in a system, no combination of a fraction valve and a fraction collector possible)	OpenLAB® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version ¹⁷⁾	Chromeleon™ CDS version Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
KNAUER MultiValve Fraction Collector (all KNAUER electric valve drives; 2, 6, 12 and 16 ports)	OLEE A.01.05 / A.04.05 Driver 1017 ¹⁾	CCP 2.6 ²⁾	n/a	CG 3.1.6 Driver 423 ¹⁾	Version: 5.07.039 ³⁾
ASM 2.1L valve	OLEE A.01.05 / A.04.05 Driver 1017 ¹³⁾	CCP 3.0.7 Driver 3078 ¹⁴⁾	n/a	CG 3.3.2; Driver 2825 ¹⁵⁾	Version: 5.07.039 ¹⁶⁾
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
Buechi Fraction Collector C-660	OLEE A.01.05 / 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.01.05 / A.04.05 Driver 1017 ⁷⁾	CCP 2.6.5 Driver 1094 (RS-232 only) ⁸⁾	Implemented (not by KNAUER)	CG3.3.2 Driver 1751 ⁷⁾	Version: 5.07.039
ISCO Fraction Collector Foxy R2 ⁶⁾	OLEE A.01.05 / A.04.05 Driver 1017 ⁷⁾	CCP 2.6.5 Driver 1094 (RS-232 only) ⁸⁾	n/a	CG3.3.2 Driver 1751 ⁷⁾	Version: 5.07.039
ISCO Fraction Collector Foxy 200 ⁹⁾	n/a	CCP 2.6 and CCP 2.6.5 Driver 1100 ⁹⁾	Implemented (not by KNAUER)	CG 3.1.7 Driver 1466 – CG3.3.2 Driver 1751 ⁹⁾	n/a
Labocol Vario 2000 Fraction Collector	OLEE A.01.05 / A.04.05 Driver 1017	n/a	n/a	CG 3.1.6 Driver 423	Version: 5.07.039
Labocol Vario 4000 Fraction Collector	OLEE A.01.05 / A.04.05 Driver 1017 (RS-232 only)	n/a	-	CG 3.3.1 Driver 1640 (RS-232 only)	Version: 5.07.039

Fraction Collectors (one fraction collector in a system, no combination of a fraction valve and a fraction collector possible)	OpenLAB® CDS EZChrom Edition CDS version and Driver Version	ClarityChrom® CDS version and Driver Version ¹⁷⁾	Chromeleon™ CDS version Driver version	ChromGate® CDS version and Driver Version	PurityChrom®
Labocol Vario 4000 Plus Fraction Collector	n/a	n/a	-	n/a	Version: 5.07.039
VICI Valco MultiValve Fraction Collector	OLEE A.01.05 / A.04.05 Driver 1017 ¹⁾	n/a from KNAUER, valve is supported in ASM 2.1L as FC ^{10) 11)}	n/a	CG 3.3.1 Driver 1640 ¹⁾	Version: 5.07.039 ³⁾
Virtual Fraction Collector	OLEE A.01.05 / A.04.05 Driver 1017	CCP 2.6	n/a	CG 3.1.6 Driver 423	n/a
Injection Module (combined module with pump and injection valve for injection of large injection volumes, allows for stacked injection) ¹²⁾	OLEE A.01.05 / A.04.05 Driver 1017	n/a	n/a	CG 3.3.1 Driver 1640	n/a

- 1) - up to 32 valves in a cascade
- 2) - up to 12 valves in a cascade
- 3) - only one valve 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) - only RS-232, communication via LAN is not supported
- 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 ASM2.1L pump and valve must 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) - Data Apex 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

Mobile Control

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 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. For **Monitor Mode, supported only in OpenLAB® EE and ClarityChrom®**, every Mobile Control version requires a minimum KNAUER driver version for the respective CDS.

Mobile Control (KNAUER), Version 5.3.0 also with data acquisition support, supports AZURA® devices:

- Pump P 2.1S/P 4.1S - Firmware V01.37
- Pump P 6.1L - Firmware V01.05
- Pump P 2.1L - Firmware V01.09
- Detector UVD2.1S - Firmware V01.11
- Detector UVD 2.1L - Firmware V02.06
- Detector MWD 2.1L - Firmware V01.10
- Detector DAD 2.1L - Firmware V01.10
- Detector DAD 6.1L - Firmware V01.23
- Detector RID 2.1L - Firmware V01.15
- Valve V 2.1S - Firmware V5.01
- Assistant ASM 2.1L - Firmware V01.13
- Column thermostat CT 2.1 - Firmware V01.06
- Autosampler AS 3950 - Firmware V01.17
- Autosampler AS 6.1L - Firmware V01.17
- IFU 2.1 LAN - Firmware V1.05

Mobile Control version 5.3.0 supports Monitor Mode in OpenLAB® EE from driver version 2126 or in ClarityChrom® /Prep (5.0.5 or higher) from driver version 5053.

Monitor Mode is not supported in any other CDS, e.g. PurityChrom® and Chromeleon™. Either CDS or Mobile Control can access the devices.

Mobile Control (KNAUER), Version 4.0.0 also with data acquisition support, supports AZURA® devices:

- Pump P 2.1S/P 4.1S - Firmware V01.37
- Pump P 6.1L - Firmware V01.03
- Pump P 2.1L - Firmware V01.08
- Detector UVD2.1S - Firmware V01.10
- Detector UVD 2.1L - Firmware V02.05
- Detector MWD 2.1L - Firmware V01.02
- Detector DAD 2.1L - Firmware V01.02
- Detector DAD 6.1L - Firmware V01.23
- Detector RID 2.1L - Firmware V01.10
- Valve V 2.1S - Firmware V4.14
- Assistant ASM 2.1L - Firmware V01.12
- Column thermostat CT 2.1 - Firmware V01.06
- Autosampler AS 3950 - Firmware V01.16

Mobile Control version 4.0.0 supports Monitor Mode in OpenLAB® EE from driver version 2092 or in ClarityChrom® /Prep (5.0.5 or higher) from driver version 5037.

Monitor Mode is not supported in any other CDS, e.g. PurityChrom® and Chromeleon™. Either CDS or Mobile Control can access the devices.

Mobile Control (KNAUER), Version 3.0.1 also with data acquisition support, supports AZURA® devices:

- Pump 6.1L (from firmware version 1.03),
- Pump 2.1L (from firmware version 1.08),
- Pump P 2.1S/P 4.1S (from firmware version 1.32),
- UVD 2.1L (from firmware version 2.04),
- DAD 2.1L (from firmware version 1.1),
- DAD 6.1L (from firmware version 1.21),
- MWD 2.1L (from firmware version 1.1),
- UVD 2.1S (from firmware version 1.08),
- ASM 2.1L (from firmware version 1.11),
- Valve V 2.1S (from firmware version 4.14),
- CT 2.1 (from firmware version 1.06),
- AS 3950 (from firmware version 0840.133-115)

Mobile Control version 3.0.1 supports Monitor Mode in OpenLAB® EE from driver version 2087 or in ClarityChrom® /Prep (5.0.5 or higher) from driver version 5029.

Monitor Mode is not supported in any other CDS, e.g. PurityChrom® and Chromeleon™. Either CDS or Mobile Control can access the devices.

Mobile Control (KNAUER), Version 2.2.0 supports AZURA® devices:

- Pump 6.1L (from firmware version 1.02),
- Pump 2.1L (from firmware version 1.07),
- Pump P 2.1S/P 4.1S (from firmware version 1.32),
- UVD 2.1L (from firmware version 2.04),
- DAD 2.1L (from firmware version 1.1),
- DAD 6.1L (from firmware version 1.21),
- MWD 2.1L (from firmware version 1.1),
- UVD 2.1S (from firmware version 1.08),
- ASM 2.1L (from firmware version 1.10),
- Valve V 2.1S (from firmware version 4.14)
- CT 2.1 (from firmware version 1.06)

Mobile Control version 2.2.0 supports Monitor Mode in OpenLAB® EE from driver version 2047 or in ClarityChrom®/Prep (5.0.5 or higher) from driver version 5015.

Monitor Mode is not supported in any other CDS, e.g. PurityChrom® and Chromeleon™. Either CDS or Mobile Control can access the devices.

EuroChrom for Windows 3.05 (KNAUER)

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, Smartline Manager 5000, KNAUER HPLC Box (Model 96)

Thermostats/Column Ovens

JetStream

Valves

KNAUER WellChrom K-6 / K-12 / K-16 (Smartline S 6 / S 12 / S 16 and AZURA® V2.1S 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

LabVIEW (National Instruments) - support is discontinued, 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

TRADEMARKS

The company, product and service names used in this brochure are for identification purposes only.

All trademarks and registered trademarks are the property of their respective owners.

This document is subject to technical changes.

Please go to www.knauer.net for latest version, ordering details and overview of article numbers.

© KNAUER
All rights reserved.
Version 1.12
Last update: 2018/02/16
KNAUER Wissenschaftliche Geräte GmbH
Hegauer Weg 38
14163 Berlin, Germany
Tel.: +49-(0)30-809727-0
Fax: +49-(0)30-8015010
E-mail: info@knauer.net
Internet: www.knauer.net