Camera Access Protocol (CAP) Version 1.11

for

ALEXA SXT/LF/65, AMIRA, ALEXA Mini & Mini LF, ALEXA 35

TECHNICAL INFORMATION

Date: February 29, 2024

Camera Access Protocol Feature List (CAP) 1.11

1 Introduction

The Camera Access Protocol (CAP) is used to control and monitor the ARRI cameras via a network connection. The protocol incorporates functions to perform color grading, query and set variables such as the exposure index, start and stop a recording and much more. It is currently available for the ALEXA 35, ALEXA SXT, ALEXA LF, ALEXA 65, ALEXA Mini, ALEXA Mini LF and AMIRA camera lines.

2 Available CAP Features

Note that not all functions are available on all camera models. (for availability see column ALEXA SXT/LF/65 and ALEXA 35/Mini/Mini LF/AMIRA)

2.1 List of critical changes

Date	Change Note	Bug fixes	Critical changes	Author
2023-09-12	Added items introduced with protocol version 1.11		- Add monitoring zoom variables - Add commands to set/get custom DRTs	Daasch
2023-07-27	Added items introduced with protocol version 1.10	/	Extension of the getcliplist command with information about Codec, Recording Resolution and Sensor FPS.	Siegmund
2023-04-17	Added items introduced with protocol version 1.8 and 1.9	/	Extension of existing variables Sensor FPS List, Shutter Angle List, Exposure Time List, Exposure Index List with a subelement to each array element. Use subelement count in array header to ignore unwanted fields	Daasch

2.2 List of Commands

Nr.	NAME	CAP Version	ALEXA SXT/LF/65	ALEXA 35/ Mini/Mini LF /AMIRA
1	Live	0.9	SUP 1.0 and later	SUP 5.0 and later
2	RequestPwdChallenge	0.9	SUP 1.0 and later	SUP 5.0 and later
3	Password	0.9	SUP 1.0 and later	SUP 5.0 and later
4	ClientName	0.9	SUP 1.0 and later	SUP 5.0 and later
5	RequestVariables	0.9	SUP 1.0 and later	SUP 5.0 and later
6	Un-RequestVariables	0.9	SUP 1.0 and later	SUP 5.0 and later
7	SetVariable	0.9	SUP 1.0 and later	SUP 5.0 and later
8	Welcome	0.9	SUP 1.0 and later	SUP 5.0 and later
9	GetFrameGrab	0.9	SUP 1.0 and later	SUP 5.0 and later
10	Get3DLutFile	0.9	SUP 1.0 and later	SUP 5.0 and later
11	Set3DLutFile	0.9	SUP 1.0 and later	SUP 5.0 and later
12	Get3DLutData	0.9	SUP 1.0 and later	SUP 5.0 and later
13	Set3DLutData	0.9	SUP 1.0 and later	SUP 5.0 and later
14	SaveLookFile	0.9	SUP 1.0 and later	SUP 5.0 and later
15	GetVariable	0.9	SUP 1.0 and later	SUP 5.0 and later
16	ImgCompareUpload	0.9	SUP 1.0 and later	not available
17	ImgCompareSwitch	0.9	SUP 1.0 and later	not available
18	AutoWhiteBalance	1.0	no	SUP 5.1 and later
19	RecordStart	1.0	no	SUP 5.1 and later
20	RecordStop	1.0	no	SUP 5.1 and later

21	StopMotionTrigger	1.0	no	SUP 5.1 and later
22	LoadSetupFile	1.0	no	SUP 5.1 and later
23	LoadLookFile	1.0	no	SUP 5.1and later
24	PlaybackEnter	1.1	no	SUP 5.3 and later
25	PlaybackExit	1.1	no	SUP 5.3 and later
26	PlaybackStart	1.1	no	SUP 5.3 and later
27	PlaybackPause	1.1	no	SUP 5.3 and later
28	PlaybackClipSkip	1.1	no	SUP 5.3 and later
29	PlaybackShuttle	1.1	no	SUP 5.3 and later
30	PlaybackSpeed	1.1	no	SUP 5.3 and later
31	InstallLookFile from Lool Library	1.1	no	SUP 5.3 and later
32	Access to camera alerts & events	1.1	no	SUP 5.3 and later
33	ClearMessageEvent	1.1	no	SUP 5.3 and later
34	GetClipList	1.1	no	SUP 5.3 and later
35	Generate ALE Clip List from medium	1.1	no	SUP 5.3 and later
36	DeleteLookFile	1.2	no	SUP 6.0 and later
37	CompleteALE	1.2	no	SUP 6.0 and later
38	LoadFrameline	1.3	no	SUP 6.1 and later
39	UnloadFrameline	1.3	no	SUP 6.1 and later
40	AddFrameline	1.3	no	SUP 6.1 and later
41	DeleteFrameline	1.3	no	SUP 6.1 and later
42	GetSetupFile	1.3	no	SUP 6.1 and later
43	AddSetupFile	1.3	no	SUP 6.1 and later
44	AddSensorFPS	1.3	no	SUP 6.1 and later
45	DeleteSensorFPS	1.3	no	SUP 6.1 and later
46	AddShutter	1.3	no	SUP 6.1 and later
47	DeleteShutter	1.3	no	SUP 6.1 and later
48	AddExposureTime	1.3	no	SUP 6.1 and later
49	DeleteExposureTime	1.3	no	SUP 6.1 and later
50	AddWhiteBalance	1.3	no	SUP 6.1 and later
51	DeleteWhiteBalance	1.3	no	SUP 6.1 and later
52	AudioLevelMode	1.3	no	SUP 6.1 and later
53	AudioGain	1.3	no	SUP 6.1 and later
54	DescribeVariables	1.5	no	SUP 7.1 and later
55	GetVariableNames	1.5	no	SUP 7.1 and later

56	SaveSetup	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
57	GetFrameline	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
58	AddTexture	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
59	DeleteTexture	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
60	LoadTexture	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
61	GetTexture	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
62	AddLensTable	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
63	InstallLensTable	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
64	DeleteLensTable	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
65	InspectLensTable	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
66	LoadLensTable	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
67	UnloadLensTable	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
68	GetLensTable	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
69	AddLensTableFav	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
70	DeleteLensTableFav	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
71	AddLookFile	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
72	RenameLookFile	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
73	DuplicateLookFile	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
74	GetLookFile	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
75	Get3DLutDataEx	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
76	Set3DLutDataEx	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
77	EvalRecordingFormat	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
78	SetRecordingFormat	1.7	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
79	ButtonPress	1.9	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
80	ButtonRelease	1.9	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
81	ButtonAssign	1.9	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
82	ClearMsgEvents	1.10	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
83	SetAudioRecSrc	1.10	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
84	SetTCToCameraTime	1.10	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
85	SetDRTData	1.11	no	ALEXA 35 SUP 1.2.1 and later
86	SetDRTData	1.11	no	ALEXA 35 SUP 1.2.1 and later

2.3 List of Variables

No.	NAME	CAP Version	Read mode	Remarks	ALEXA SXT/LF/65	ALEXA 35/Mini/Mini LF /AMIRA
1	Camera Type	0.9	read only	“Alexa SXT”	SUP 1.0 and later	SUP 5.0 and later
2	Camera Serial	0.9	read only	“6002”	SUP 1.0 and later	SUP 5.0 and later
3	Camera State	0.9	read only	Bitfield with CameraState enum bits	SUP 1.0 and later	SUP 5.0 and later
4	Look Filename	0.9	read only	w/o .ending	SUP 1.0 and later	SUP 5.0 and later
5	CDL Values	0.9		List of 10x F32	SUP 1.0 and later	SUP 5.0 and later
6	Color Temperature	0.9		WhiteBalance [Kelvin]	SUP 1.0 and later	SUP 5.0 and later
7	Tint	0.9		WhiteBalance Tint Value	SUP 1.0 and later	SUP 5.0 and later
8	Exposure Index	0.9		EI in Asa, see Exposure Index List for possible values	SUP 1.0 and later	SUP 5.0 and later
9	Look Switch EVF	0.9		LookSwitch (6.3.5)	SUP 1.0 and later	SUP 5.0 and later
10	Look Switch Mon1	0.9			SUP 1.0 and later	SUP 5.0 and later
11	Look Switch Mon2	0.9			SUP 1.0 and later	SUP 5.0 and later
12	Look Switch Mon3	0.9			SUP 1.0 and later	SUP 5.0 and later
13	Sensor FPS List	1.0	read only	Each array element consists of: F32: fps, (& U32: bitfield with List Entry Flags since v1.9)	no	SUP 5.1 and later
14	Sensor FPS	1.0		Is not required to be contained in Sensor FPS List	no	SUP 5.1 and later
15	Shutter Angle List	1.0	read only	Each array element consists of a single F32, (& U32: bitfield with List Entry Flags since v1.9)	no	SUP 5.1 and later
16	Shutter Angle	1.0		Is not required to be contained in Shutter Angle List	no	SUP 5.1 and later
17	Exposure Time List	1.0	read only	Each array element consists of a single F32, (& U32: bitfield with List Entry Flags since v1.9)	no	SUP 5.1 and later

18	Exposure Time	1.0		Is not required to be contained in Exposure Time List	no	SUP 5.1 and later
19	Exposure Index List	1.0	read only	Each array element consists of a single U32, (& U32: bitfield with List Entry Flags since v1.9)	no	SUP 5.1 and later
20	ND Filter List	1.0	read only	Each array element consists of a single U16, read-only	no	SUP 5.1 and later
21	ND Filter	1.0		Optical density, see ND Filter List for possible values	no	SUP 5.1 and later
22	White Balance List	1.0	read only	Each array element consists of a triple (CCT in Kelvin: F32, Tint: F32, Name: string), read-only	no	SUP 5.1 and later
23	Focus Tool Mon	1.0		Each array element – one per Mon out – consists of a single bool, writeable	no	SUP 5.1 and later
24	Exposure Tool Mon	1.0		Each array element – one per Mon out – consists of a single bool, writeable	no	SUP 5.1 and later
25	Test Image	1.0		TestImage (6.3.8)	no	SUP 5.1 and later
26	Media Status	1.0	read only	See section 8.5	no	SUP 5.1 and later
27	User Setup List	1.0	read only	Each array element – one per internally stored setup file – consists of a single string containing the name of the file	no	SUP 5.1 and later
28	Look File List	1.0	read only	Each array element – one per internally stored look file – consists of a single string containing the name of the file	no	SUP 5.1 and later
29	Recording Mode	1.0		RecordingMode (6.3.11)	no	SUP 5.1 and later
30	Camera Index	1.0		Value corresponding to the index letter assigned to the camera, Value Range A-Z (A= 0 -- Z = 25)	no	SUP 5.2 and later
31	Mon Processed	1.0		Each array element consists of a single bool, read-only	no	SUP 5.2 and later
32	SDI In Mode	1.0		SDI_InMode (6.3.13)	no	SUP 5.2 and later
33	Tally State	1.0		TallyState (6.3.14)	no	SUP 5.2 and later
34	Exposure Unit	1.0		ExposureUnit (6.3.12)	no	SUP 5.2 and later
35	Current Date	1.1		Always in the following system time format: "YYYY-MM-DD HH:MM:SS"	no	SUP 5.3 and later
36	Project Rate	1.1		ProjectRate (6.3.4). Enumeration value symbols ending with 'I' (e.g. PR_59940i) represent	no	SUP 5.3 and later

				interlaced frame rates.		
37	Active Alert States	1.1	read only	Bitset of active alert states, read-only. See section 8.3 "Active Alert States"	no	SUP 5.3 and later
38	Active Message Events	1.1	read only	Each array element consists of a pair (event ID: U16, message text: string). Read-only.	no	SUP 5.3 and later
39	Active Medium	1.1		The ID is the index into the array exposed through variable Media Status (0x006d) or 0xffff if no active Medium is present.	no	SUP 5.3 and later
40	Timecode	1.1		BCD timecode: HHMMSSFF	no	SUP 5.3 and later
41	Timecode Offset	1.1		User-configurable timecode offset	no	SUP 5.3 and later
42	Timecode Run Mode	1.1		TC_RunMode (6.3.15).	no	SUP 5.3 and later
43	Timecode Init Mode	1.1		TC_InitMode (6.3.16).	no	SUP 5.3 and later
44	Timecode Drop Mode	1.1		Drop frame mode flag	no	SUP 5.3 and later
45	Last Rec Medium	1.1	read only	ID of the medium containing the last recorded clip. Useful in combination with Last REC Clip ID. Read-only.	no	SUP 5.3 and later
46	Last Rec Clip Index	1.1	read only	Index of the last recorded clip. Useful in combination with Last REC Medium ID to be fed into command GetClipList (0x00a4). Read-only.	no	SUP 5.3 and later
47	Lens Model	1.1	read only	Model of the attached lens.	no	SUP 5.3 and later
48	Lens Serial Number	1.1	read only	Serial number of the attached lens.	no	SUP 5.3 and later
49	Lens Focus	1.1	read only	Lens focus distance in mm, 0 for invalid/unknown, -1 for infinity.	no	SUP 5.3 and later
50	Lens Iris	1.1	read only	Lens iris value in 1/1000th stops, with 1000 = T1, -1 for invalid, -2 for closed and -3 for near closed iris.	no	SUP 5.3 and later
51	Lens Focal Length	1.1	read only	Lens zoom (focal length) in 1/1000th mm, 0 for invalid/unknown	no	SUP 5.3 and later
52	Clip Scene	1.1		Descriptive metadata item for maximum 16 characters	no	SUP 5.3 and later
53	Clip Take	1.1		Descriptive metadata item for maximum 08 characters	no	SUP 5.3 and later
54	Production	1.1		Descriptive metadata item for	no	SUP 5.3 and later

				maximum 32 characters		
55	Production Company	1.1		Descriptive metadata item for maximum 32 characters	no	SUP 5.3 and later
56	Director	1.1		Descriptive metadata item for maximum 32 characters	no	SUP 5.3 and later
57	Cinematographer	1.1		Descriptive metadata item for maximum 32 characters	no	SUP 5.3 and later
58	Camera Operator	1.1		Descriptive metadata item for maximum 32 characters	no	SUP 5.3 and later
59	Location	1.1		Descriptive metadata item for maximum 64 characters	no	SUP 5.3 and later
60	User Info 1	1.1		Descriptive metadata item for maximum 128 characters	no	SUP 5.3 and later
61	User Info 2	1.1		Descriptive metadata item for maximum 128 characters	no	SUP 5.3 and later
62	Playback Clip Index	1.2	read only	This variable returns the index of the clip currently in playback in in the clip list which can be retrieved via the GetClipList command.	no	SUP 6.0 and later
63	Remaining Rec Time	1.2	read only	This variable holds the remaining time to record with current settings as a count of seconds.	no	SUP 6.0 and later
64	Battery Voltage	1.2	read only	This variable holds electrical voltage of the connected battery in Volts.	no	SUP 6.0 and later
65	Battery Capacity	1.2	read only	This variable holds the remaining charge of the connected battery in percent.	no	SUP 6.0 and later
66	Main Voltage	1.3	read only	Current voltage on the main power supply connector.	no	SUP 6.1 and later
67	Current Reel	1.3	read only	Current reel count	no	SUP 6.1 and later
68	Clip Number	1.3	read only	Clip number displayed on home screen	no	SUP 6.1 and later
69	Prerecord Duration	1.3		Current Prerecord Duration	no	SUP 6.1 and later
70	Master Black Pedestal	1.3		Master black pedestal that offsets RGB video pedestal	no	SUP 6.1 and later
71	Video Pedestal	1.3		List of 3x F32 RGB pedestals	no	SUP 6.1 and later
72	Video Slope	1.3		List of 3x F32 RGB slopes	no	SUP 6.1 and later
73	Video Gamma RGB	1.3		List of 3x F32 RGB gammas	no	SUP 6.1 and later
74	Video Knee	1.3		Active video knee in the active look	no	SUP 6.1 and later

75	Video Gamma	1.3		Active video gamma in the active look	no	SUP 6.1 and later
76	Video Saturation	1.3		Active video saturation in the active look	no	SUP 6.1 and later
77	Black Gamma	1.3		Active video black gamma in the active look	no	SUP 6.1 and later
78	Video Saturation Red	1.3		Active video saturation red in the active look	no	SUP 6.1 and later
79	Video Saturation Yellow	1.3		Active video saturation yellow in the active look	no	SUP 6.1 and later
80	Video Saturation Green	1.3		Active video saturation green in the active look	no	SUP 6.1 and later
81	Video Saturation Cyan	1.3		Active video saturation cyan in the active look	no	SUP 6.1 and later
82	Video Saturation Blue	1.3		Active video saturation blue in the active look	no	SUP 6.1 and later
83	Video Saturation Magenta	1.3		Active video saturation magenta in the active look	no	SUP 6.1 and later
84	Frameline List	1.3	read only	List of available framelines in the internal storage of the camera. Array consisting of the following items per element: • String: name of frameline file • U8: flag to indicate if the frameline can be applied with the current camera settings	no	SUP 6.1 and later
85	Filter Sharpness	1.3		Current Filter Sharpness	no	SUP 6.1 and later
86	Audio Level Mode	1.3	read only	Array of struct (U8, U16) see section 8.6.	no	SUP 6.1 and later
87	Audio Gain	1.3	read only	Array of struct (U8, F32) see section 8.7.	no	SUP 6.1 and later
88	LDS State Flags	1.4	read only		no	SUP 7.0 and later
89	Lens Converter Short Description	1.4	read only		no	SUP 7.0 and later
90	Lens Converter Long Description	1.4	read only		no	SUP 7.0 and later
91	Lens Converter Serial	1.4	read only		no	SUP 7.0 and later
92	Lens Converter Physical Length	1.4	read only		no	SUP 7.0 and later

93	Lens Converter Light Loss	1.4	read only		no	SUP 7.0 and later
94	Lens Converter Focal Length Multiplier	1.4	read only		no	SUP 7.0 and later
95	Genlock Sync Shift	1.5		Genlock sync shift, in µs (microseconds)	no	SUP 7.1 and later
96	Genlock Sync Shift Scale	1.5	read only	Scale / granularity of the Genlock Sync Shift value, in µs	no	SUP 7.1 and later
97	Look Modified	1.5	read only	Flag indicating whether the currently active look has been modified by the user	no	SUP 7.1 and later
98	Camera Index 2	1.7		Value corresponding to the second index letter assigned to the camera, value range 'A'-'Z' and '_' ('_'=0, 'A'=1, …, 'Z'=26)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
99	Frameline	1.7	read only	Filename of the currently active frame line	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
100	Codec List	1.7	read only	Each array element consists of a pair (string, U32) containing the codec name and the bit set of compatible recording resolutions per index in the *Rec Resolution List* variable	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
101	Codec	1.7	read only	Index of the currently active codec per *Codec List*	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
102	Rec Resolution List	1.7	read only	Each array element consists of a 8-tuple of values describing a recording resolution, see section 8.8	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
103	Recording Resolution	1.7	read only	Index of the currently active recording resolution per *Rec Resolution List*	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
104	Texture List	1.7	read only	Each array element – one per internally stored texture – consists of a single string containing the name of the texture	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
105	Texture	1.7	read only	Filename of the currently active texture	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
106	Color Space SDI1	1.7		Color space of SDI1, values from SDIColorSpace (6.3.19)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
107	Color Space SDI2	1.7		Color space of SDI2, values from SDIColorSpace (6.3.19)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and

						later
108	Look File Type	1.7	read only	Look file type supported by the camera. Bitfield with LookFileType enum bits. Modeled as a bit field as in theory a camera could support multiple look file types. In practice currently treated as an enum.	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
109	Lens Table List	1.7	read only	List of installed lens tables; each array element consists of a single string containing the name of the lens table	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
110	Lens Table Archive	1.7	read only	List of lens tables in the built-in archive; each array element consists of a single string containing the name of the lens table	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
111	Lens Table	1.7	read only	Single element array, where its only entry consists of a 6-tuple of values describing the currently active lens table, see section 8.9	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
112	Lens Table Favorites	1.7	read only	Each array element consists of a triple of values describing one entry in the favorites table, see section 8.10 (filename, display name, scale class)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
113	Look Intensity	1.7		Look intensity, in the range of 0-1. Variable *Look Intensity Scale* determines the available values in that range	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
114	Look Intensity Scale	1.7	read only	Unit of change for the *Look Intensity* value	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
115	Look LUT Mesh Points	1.7	read only	Number of mesh points per channel of the currently active 3D LUT, 0 if a parametric look with no materialized LUT is active	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
116	Power Priority	1.7		User preference regarding priority of power inputs, see PowerPriority (6.3.21)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
117	BAT Unit Preference	1.7		User preference regarding unit (Volt/percent) of power level indication & warnings, see BatUnitPreference (6.3.22)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
118	PWR BAT LEDs	1.7		Setting (on/off) for PWR/BAT	no	SUP 7.2 +

				LED indicators		ALEXA 35 SUP 1.0 and later
119	BAT Auto Boot Up	1.7		Setting (on/off) indicating whether the camera re-powers from battery after power-down in low-power situations Note: setting this to *true* might lead to repeated power cycles in case of low-power batteries	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
120	BAT Warning Voltage	1.7		Warning level for the power source connected to BAT in Volt	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
121	BAT Warning Capacity	1.7		Warning level for the power source connected to BAT and any additional hot-swap battery in percent	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
122	PWR Warning Voltage	1.7		Warning level for the power source connected to PWR in Volt	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
123	PWR Warning Capacity	1.7		Warning level for the power source connected to PWR in percent; applicable to smart battery connected to PWR connector	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
124	BAT Type	1.7	read only	Type of power source connected to BAT, see PowerType (6.3.23)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
125	BAT State	1.7	read only	State of power source connected to BAT, see BatteryState (6.3.24)	no	SUP 7.2 +ALEXA 35 SUP 1.0 and later
126	BAT Voltage	1.7	read only	Current voltage delivered by power source connected to BAT; undefined if no power source is connected	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
127	BAT Capacity	1.7	read only	Remaining capacity in percent of the battery connected to BAT; undefined if *BAT Type* is not 0x0002	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
128	PWR Type	1.7	read only	Type of power source connected to PWR, see PowerType (6.3.23)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
129	PWR State	1.7	read only	State of power source connected to PWR, see BatteryState (6.3.24)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
130	PWR Voltage	1.7	read only	Current voltage delivered by power source connected to PWR; undefined if no power	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later

				source is connected		
131	PWR Capacity	1.7	read only	Remaining capacity in percent of the battery connected to PWR; undefined if *PWR Type* is not 0x0002	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
132	Hot Swap Type	1.7	read only	Type of hot-swap smart battery connected to the back of the camera, see PowerType (6.3.23)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
133	Hot Swap State	1.7	read only	State of hot-swap smart battery connected to the back of the camera, see BatteryState (6.3.24)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
134	Hot Swap Capacity	1.7	read only	Remaining capacity in percent of the hot-swap battery; undefined if *Hot Swap Type* is not 0x0002	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
135	Power Input Status	1.7	read only	Current status of the power input as a bitset, see PowerInputStatus (6.3.25)	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
136	Power Prio Status	1.7	read only	Current power priority status, see PowerPriority	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
137	Accessory Supply Status	1.7	read only	Bitset indicating which accessories are supplied with power, bits are indices of *Accessory Supply List*	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
138	Accessory Supply List	1.7	read only	List of power-supplied accessories; each array element is a single string containing the symbolic name of the accessory power	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
139	Look File Library	1.7	read only	List of look files in the built-in archive; each array element consists of a single string containing the filename of the look	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
140	Enhanced Sensitivity Mode	1.7		Flag indicating whether Enhanced Sensitivity Mode is active	no	SUP 7.2 + ALEXA 35 SUP 1.0
141	ESM Minimum EI	1.7	read only	Minimum Exposure Index setting that supports Enhanced Sensitivity Mode; 0xFFFFFFFF if Enhanced Sensitivity Mode is unavailable due to operational constraints	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
142	Playback Speed	1.7	read only	Current playback speed, 0 if paused	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
143	Playback Position	1.7	read only	Current position of the playhead	no	SUP 7.2 + ALEXA 35 SUP

				in percent, 0 if at start of clip, 100 if at the end		1.0 and later
144	Playback End Mode	1.7		PlaybackEndMode, see 6.3.26	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
145	Sensor Mirroring	1.7		SensorMirroring, see 6.3.27	no	SUP 7.2 + ALEXA 35 SUP 1.0 and later
146	WRS Power	1.8	read only	Flag indicating whether White Radio Power is active	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
147	WRS Channel	1.8	read only	Selected White Radio Channel	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
148	WRS Frequency	1.8	read only	Frequency of selected White Radio Channel	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
149	Wlan Host Channel	1.8		Wlan Host Channel selection of camera access point	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
150	Wlan ACS Active	1.8	read only	Flag indicating whether Automatic Channel Selection is active	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
151	Wlan ACS Restriction	1.8		List of WLAN channels that are excluded from Automatic Channel Selection	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
152	Timecode Regen Source	1.9	read only	Timecode source	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
153	User Button Actions	1.9	read only	Available actions/functions that can be assigned to user buttons. Each array element consists of one U32 user button action	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
154	GPIO User Button Action	1.9	read only	Available actions/functions that can be assigned to GPIO user buttons. Each array element consists of one U32 from enum ButtonActions	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
155	MVF User Buttons	1.9	read only	The MVF user buttons with their currently assigned actions. Each array element consists of: String: button name, U32: user button action	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
156	MVF User Button LEDs	1.9	read only	The state of the MVF user button LEDs. Each array element consists of: String: button name, U16: LED state (0/1)	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
157	Camera User Buttons	1.9	read only	The camera (body) user buttons with their currently assigned actions. Each array element consists of: String: button name, U32: user button action (~~CAP 1848~~ - *Missing cross-reference*	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later

				), F32: function parameter		
158	Camera User Button LEDs	1.9	read only	The state of the camera user button LEDs. Each array element consists of: String: button name, U16: LED state (0/1)	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
159	Hand Unit User Buttons	1.9	read only	The hand unit user buttons with their currently assigned actions. Each array element consists of: String: button name, U32: user button action	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
160	Hand Unit User Button LEDs	1.9	read only	The state of the hand unit user button LEDs. Each array element consists of: String: button name, U16: LED state (0/1)	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
161	LBUS Device User Buttons	1.9	read only	The LBUS device user buttons with their currently assigned actions. Each array element consists of: String: button name, U32: user button action	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
162	LBUS Device User Button LEDs	1.9	read only	The state of the LBUS device user button LEDs. Each array element consists of: String: button name, U16: LED state (0/1)	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
163	GPIO User Buttons	1.9	read only	The GPIO user buttons with their currently assigned actions. Each array element consists of: String: button name, U32: user button action	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
164	GPIO User Button LEDs	1.9	read only	The state of the GPIO user button LEDs. Each array element consists of: String: button name, U16: LED state (0/1)	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
165	Lens User Buttons	1.9	read only	The lens user buttons with their currently assigned actions. Each array element consists of: String: button name, U32: user button action	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
166	Lens User Button LEDs	1.9	read only	The state of the lens user button LEDs. Each array element consists of: String: button name, U16: LED state (0/1)	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
167	Camera Temperature State	1.9	read only	Camera temperature state	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later

168	Auto WB Result	1.9	read only	Latest result of Auto White Balance function. Array has 1 row with 4 values (U32 revision, S32 flag, F32 CCT, F32 tint).	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
169	Power Voltage	1.9	read only	List of battery, mains voltages. Consists of: F32: battery voltage, F32: mains voltage, F32: hotswap voltage	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
170	Power Capacity	1.9	read only	List of battery, mains capcities in percent. Consists of: U32: battery capacity, U32: mains capacity, U32: hotswap capacity	no	SUP 7.3 + ALEXA 35 SUP 1.1 and later
171	Monitor User Buttons	1.10	read only	The Monitor user buttons with their currently assigned actions. Each array element consists of: String: button name, U32: user button action	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
172	Monitor User Button LEDs	1.10	read only	The state of the Monitor user button LEDs. Each array element consists of: String: button name, U16: LED state (0/1)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
173	Audio Recording Enabled	1.10		Enable (1)/Disable (0) Audio Recording and query its state	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
174	Media Clip Count	1.10	read only	Number of recorded clips on the active medium	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
175	Current Clip	1.10	read only	Metadata of the current recorded clip: U32: clip duration in seconds, U32: current clip number	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
176	Audio Level	1.10	read only	Audio levels. One I32 per recorded channel	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
177	Audio Recording Source	1.10	read only	Each audio recording channel input is represented by a U16 enum value	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
178	Sensor Mode	1.10		Sensor Mode as of variable "Sensor Mode List"	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
179	Sensor Mode List	1.10	read only	Each array element consists of a tuple of values describing a recording resolution, see section 8.16	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
180	Recording Processing	1.10	read only	Recording processing enum as described in 6.3.29	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
181	Playback Clip Name	1.10		Clip Name of the current played clip. When camera is in	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later

				playback, clip can also be selected by this variable.		
182	Gui Monitor Mode	1.10		Currently displayed screen of the "in camera" UI can be selected with this variable. LIVE (0), HOME (1) and MENU (2) are possible	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
183	Wifi State	1.10	read only	Wifi connection state as of 6.3.30	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
184	USB State	1.10	read only	USB state flags as of 8.17. Multiple flags can be active at the same time.	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
185	Audio Number Rec Chan	1.10	read only	1-based index of highest assigned audio recording channel.	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
186	Audio Solo	1.10	read only	Array of bools indicating which audio channel is audio soloing	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
187	Audio Int Mic Mute	1.10	read only	Bool indicating whether the internal microphones are muted (e.g. via a user button)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
188	Reactive Soft Buttons	1.10	read only	Bitmask which of the 8 softbuttons on the "in camera" UI trigger a function. Offsets of the buttons are described in 8.18.	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
189	Menu Root Active	1.10	read only	Bool indicating the user being at the root in the camera menu	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
190	Status Info Data VF	1.10	read only	Meta data for status info displayed on VF path as of 8.19	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
191	Status Info Data SDI1	1.10	read only	Meta data for status info displayed on SDI1 path as of 8.19	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
192	Status Info Data SDI2	1.10	read only	Meta data for status info displayed on SDI2 path as of 8.19	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
193	Live Image Area	1.10	read only	Monitoring path live image area location as of 8.20	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
194	Audio Level Clipping	1.10	read only	Array of bools. Fields of this array turn true if the analog audio input of the camera clips	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
195	Wifi Mode	1.10		Wifi Mode Enum: Host(0), Client(1)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
196	LDS Iris	1.10	read only	LDS Iris indication for UI display as of 8.21	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
197	Active User States	1.10	read only	Same value as 0x0048 "Active Alert States" but all states are	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later

				conveyed, not only alerts		
198	FPS Constraint	1.10	read only	Subscribable constraint for the sensor FPS. Array consisting of the fields readonly (U8), min (F32), max (F32)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
199	Timecode Constraint	1.10	read only	Indication whether the timecode is readonly	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
200	Shutter Constraint	1.10	read only	Subscribable constraint for the shutter angle. Array consisting of the fields readonly (U8), min (F32), max (F32)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
201	Exp. Time Constraint	1.10	read only	Subscribable constraint for the exposure time. Array consisting of the fields readonly (U8), min (F32), max (F32)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
202	EI Constraint	1.10	read only	Subscribable constraint for the exposure index. Array consisting of the fields readonly (U8) and a bitmask indicating the usabiliy of an exposure index enum (U32)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
203	Color Temperature Constraint	1.10	read only	Subscribable constraint for the color temperature. Array consisting of the fields readonly (U8), min (U32), max (U32)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
204	Tint Constraint	1.10	read only	Subscribable constraint for the tint. Array consisting of the fields readonly (U8), min (F32), max (F32)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
205	TC Run Mode Constraint	1.10	read only	Subscribable constraint for the TC run mode. Array consisting of the fields readonly (U8) and a bitmask indicating the usabiliy of the TC run mode enum (U32)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
206	TC Init Mode Constraint	1.10	read only	Subscribable constraint for the TC init mode. Array consisting of the fields readonly (U8) and a bitmask indicating the usabiliy of the TC init mode enum (U32)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
207	TC Drop Mode Constraint	1.10	read only	Subscribable constraint for the TC drop mode. Array consisting of the fields readonly (U8) and a bitmask indicating the usabiliy of the TC drop mode enum (U32)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
208	TC Offset Constraint	1.10	read only	Subscribable constraint for the TC offset. Array consisting of the fields readonly (U8), min (I32), max (I32)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later

209	EI With ES	1.10		Array consisting of numeric exposure index (U32) and boolic enhanced sensitivity mode (U8)	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
210	Monitoring Zoom	1.11		Array consisting of video path index (U16) and bool	no	ALEXA 35 SUP 1.2.1 and later
211	Monitoring Zoom Position	1.11		Array consisting of video path index (U16) and position x/y in percent (U16)	no	ALEXA 35 SUP 1.2.1 and later
212	Monitoring Zoom Factor	1.11	read only	Array consisting of video path index (U16) and faktor x/y (F32). Read only.	no	ALEXA 35 SUP 1.2.1 and later

2.4 List of Media Status Information

Nr.	NAME	CAP Version	ALEXA SXT/LF/65	ALEXA Mini/Mini LF /AMIRA
1	Medium Type	1.0	no	SUP 5.1 and later
2	Model Name	1.0	no	SUP 5.1 and later
3	Firmware Version	1.0	no	SUP 5.1 and later
4	Serial Number	1.0	no	SUP 5.1 and later
5	Medium Size	1.0	no	SUP 5.1 and later
6	Medium Status	1.0	no	SUP 5.1 and later
7	Write Protection	1.0	no	SUP 5.1 and later
8	Clip Count	1.0	no	SUP 5.1 and later
9	Current Reel	1.0	no	SUP 5.1 and later
10	Free Capacity	1.0	no	SUP 5.1 and later

2.5 List of Metadata from GetClipList

Nr.	NAME	CAP Version	ALEXA SXT/LF/65	ALEXA Mini/Mini LF /AMIRA
1	Clip Filename	1.1	no	SUP 5.3 and later
2	Clip UUID	1.1	no	SUP 5.3 and later
3	Clip Project Rate	1.1	no	SUP 5.3 and later
4	Clip Start TC	1.1	no	SUP 5.3 and later
5	Clip Duration TC	1.1	no	SUP 5.3 and later

6	Playable flag	1.3	no	SUP 6.1 and later
7	Codec	1.10	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
8	Recording Resolution	1.10	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later
9	Sensor FPS	1.10	no	SUP 7.3 + ALEXA 35 SUP 1.2 and later

3 Contact

If you have any questions regarding the Camera Access Protocol (CAP) in ARRI cameras, please feel free to contact us via email at digitalworkflow@arri.de.