PRODUCT MATRIX













Ultrix CARBONITE



							PH	/SICAL				
ROSS	CA	RBONI	TEBLAY		GR	APH	TE	CARBONITE Ultia	CARBONITE Ultin 60	Ultrìx	CARBO	NITE
	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE	GRAPHITE PPC	GRAPHITE CPC	CARBONITE ULTRA	CARBONITE ULTRA 60	FR2	FR5	FR12
Separate Rack Frame & Panel	×	✓	×	✓	✓	✓	N/A	✓	✓	✓	✓	✓
Rack Frame Height (RU)	×	1	×	1	4	14.63" (371.5 mm)	N/A	1	3	2	5	12
Rack Frame Width	16.20" (411.50 mm)	18.98" (482.10 mm)	16.20" (411.50 mm)	18.98" (482.10 mm)	16.00" (430.00 mm)	17.09" (434.00 mm)	N/A	18.98" (482.10 mm)	17.5" (444.5 mm)	17.50" (444.5 mm)	17.50" (444.5 mm)	17.50" (444.5 mm)
Rack Frame Depth	10.60" (255.50 mm)	10.00" (254.00 mm)	10.60" (255.50 mm)	10.00" (254.00 mm)	23.30" (592.00 mm)	9.05" (230.00 mm)	N/A	10.00" (254.00 mm)	17.5" (444.5 mm)	7.90" (200.66 mm)	7.90" (200.66 mm)	7.90" (200.66 mm)
Rack Frame Weight	10.00 lbs. (4.54 kg.)	8.00 lbs. (3.63 kg.)	11.00 lbs. (4.99 kg.)	9.00 lbs. (4.08 kg.)	62.00 lbs. (28.12 kg.)	42.00 lbs. (19.05 kg.)	N/A	13.00 lbs. (5.90 kg.)	20.00 lbs (9.07 kg.)	12.00 lbs. (5.44 kg.) Blade (approx.) 3 lbs. (1.36 kg.) Ultripower: 10.6 lbs. (4.83 kg.)	14.00 lbs. (6.35 kg.) Blade (approx.) 3 lbs. (1.36 kg.) Ultripower: 10.6 lbs. (4.83 kg.)	76.00 lbs. (34.47 kg.) Blade (approx.) 3 lbs. (1.36 kg.) Ultripower: 10.6 lbs. (4.83 kg.)
Maximum SDPE Blades per Chassis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	4	16
Power Consumption	57W 4.75A 12VDC	66W 5.50A 12VDC	45W 3.75A 12VDC	48W 4.00A 12VDC	520W 4.70A 120V	185W 1.5A 120V	N/A	114W 7.6A 15VDC			See Note	
Input Power			100 - 120 V, 220 - 24	40V, 47 - 63 Hz. 1.6 A			N/A	100 - 120 V, 220 - 24	40V, 47 - 63 Hz. 1.6 A		See Note	
NOTE: Power requirements and cons	umption depende	nt on I/O and SDP	E blade compleme	ent.								
LEGEND: = Supported X = Unsupported						Spe	cifications	subject to change w	ithout notice.			

PORTS CARBONITE CARBONITE CARBONITE: TACES SOLO **GRAPHITE** GRAPHITE GRAPHITE PPC GRAPHITE CPC CARBONITE ULTRA 60 SOLO CBF 109 SOLO 13 CBF 113 CARBONITE ULTRA FR5 FR12 Ethernet Port (Frame) N/A Blades & Chassis Blades & Chassis Blades & Chassis (1 Carbonite, (1 Carbonite, 1 Windows) 1 Windows) 16 16 16 ¹ 24 24 N/A 24 per SDPE blade 24 per SDPE blade 24 per SDPE blade 24¹ 24 per SDPE blade 24 per SDPE blade GPI/O 24 24 24 24 N/A 24 24 24 per SDPE blade N/A Serial Ports (Frame) N/A LTC Input × N/A AES Input **AES Output** N/A 2³ 2³ Reference Input N/A X Reference Loop 23 2³ N/A × X X X X X X Independent Reference Output N/A ² Using Reference Output. ¹ On Audio Breakout Module ³ On Ultrix frame. √ = Supported Specifications subject to change without notice. LEGEND: X = Unsupported

							SUPP	ORED VII	DEO STANDARDS				
	ROSS	CA	RBONI	TEBLAY So		GR	RAPH	ITE	CARBONITE UIGA	CARBONITE UNG 60	Ultrìx	CARBO	NITE
	MOOO	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE	GRAPHITE PPC	GRAPHITE CPC	CARBONITE ULTRA	CARBONITE ULTRA 60 NOTE: Support for SD & UHD formats available late 2023	FR2	FR5	FR12
	480i /59.94	✓	√	✓	✓	✓	✓	✓	✓	✓	×	×	×
SD	576i /50	✓	✓	✓	✓	✓	✓	✓	✓	✓	×	×	×
HD	720p /50	✓	√	√	✓	✓	✓	✓	✓	✓	✓	✓	✓
720p	720p /59.94	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1080 pSF /23.98	✓	✓	✓	√	✓	✓	✓	✓	✓	\checkmark	✓	✓
	1080 pSF /24	×	X	X	X	X	X	✓	✓	✓	✓	✓	✓
HD pSF	1080 pSF /25	✓	√	√	✓	✓	✓	✓	✓	✓	✓	✓	✓
· [1080 pSF /29.97	✓	✓	✓	\checkmark	\checkmark	✓	✓	\checkmark	✓	\checkmark	✓	✓
	1080 pSF /30	×	X	X	×	×	X	✓	\checkmark	✓	\checkmark	✓	✓
	1080i /25	X	X	X	X	X	X		\checkmark	✓	\checkmark	\checkmark	✓
	1080i /29.97	×	X	X	×	×	X		\checkmark	✓	\checkmark	✓	✓
HD 1080i	1080i /30	X	X	X	X	X	X		\checkmark	✓	\checkmark	\checkmark	✓
	1080i /50	✓	✓	\checkmark	\checkmark	\checkmark	✓		\checkmark	✓	\checkmark	\checkmark	✓
	1080i /59.94	✓	\checkmark	\checkmark	\checkmark	\checkmark	✓		\checkmark	✓	\checkmark	\checkmark	✓
	1080p /23.98	X	X	X	×	×	X	✓	\checkmark	✓	\checkmark	✓	✓
	1080p /24	X	X	X	X	X	X	✓	\checkmark	✓	\checkmark	\checkmark	✓
	1080p /25	✓	✓	\checkmark	\checkmark	\checkmark	✓	✓	\checkmark	✓	\checkmark	✓	✓
HD	1080p /29.97	✓	✓	✓	\checkmark	\checkmark	✓	✓	\checkmark	✓	\checkmark	\checkmark	✓
080p	1080p /30	×	X	×	×	×	X	✓	\checkmark	✓	\checkmark	✓	✓
	1080p /50 (Level A)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1080p /59.94 (Level A)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1080p /60	X	X	X	X	X	X	X	✓	✓	✓	✓	✓
	2160p /23.98	×	×	×	X	×	×	×	✓	✓	✓	✓	✓
	2160p /24	×	X	X	X	X	X	×	✓	✓	✓	✓	✓
	2160p /25	×	X	X	X	X	X	×	✓	✓	✓	✓	✓
	2160p /29.97	×	X	X	X	X	X	X	✓	✓	✓	✓	✓
UHD	2160p /30	×	X	X	X	X	X	×	✓	✓	✓	✓	✓
2160p	2160p /50	×	X	X	X	X	X	×	✓	✓	✓	✓	✓
	2160p /59.94	×	×	×	X	×	×	×	✓	✓	✓	✓	✓
	2160p /60	×	X	X	X	X	X	×	✓	✓	\checkmark	✓	✓
	Single-Link 12G	×	×	×	×	×	×	×	✓	✓	✓	✓	✓
	Quad-Link 2SI, 3G Level A	×	×	×	×	×	×	×	✓	✓	✓	✓	✓
GEND:	√ = Supported X = Unsupported						Spe	cifications	subject to change v	vithout notice.			

						SDI/HD	MI/MADI I	NPUTS & OUTPU	TS			
ROSS	CA	RBONI	TEBLAY So		GR	APHI		CARBONITE UIGA	CARBONITE UIGA60	Ultrìx	CARBO	NITE
<u> </u>	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE	GRAPHITE PPC	GRAPHITE CPC	CARBONITE ULTRA	CARBONITE ULTRA 60 NOTE: Support for SD & UHD formats available late 2023	FR2	FR5	FR12
	SD/HD	SD/HD	SD/HD	SD/HD	SD/HD	SD/HD	SD/HD	SD/HD/UHD	SD/HD/UHD	HD/UHD	HD/UHD	HD/UHD
SDI Inputs	6	6	12	12	4, 8 or 12	4, 8 or 12	X	24	Up to 60	NOTE: Fireway halou		Hamata and Outrasta
SDI Outputs	5	5	5	5	6	6	×	14	Up to 25	NOTE: Figures below	w represent Ultrix Carbonite SD	inputs and Outputs
										1 SDPE + 3 HDX-IO	1 SDPE + 8 HDX-IO	1 SDPE + 15 HDX-IO
										58 ¹	146 ¹	274 ¹
										2 SDPE + 2 HDX-IO	2 SDPE + 7 HDX-IO	2 SDPE + 14 HDX-IO
										40 ¹	128 1	256 ¹
											3 SDPE + 6 HDX-IO	3 SDPE + 13 HDX-IO
											110 1	238 1
											4 SDPE + 5 HDX-IO	4 SDPE + 12 HDX-IO
											92 1	2201
												5 SDPE + 11 HDX-IO
												2021
												6 SDPE + 10 HDX-IO
												7 SDPE + 9 HDX-IO
												166 ¹
												8 SDPE + 8 HDX-IO
SDI Inputs/Outputs												148 1
												9 SDPE + 7 HDX-IO
												130 1
												10 SDPE + 6 HDX-IO
												112 1
												11 SDPE + 5 HDX-IO
												941
												12 SDPE + 4 HDX-IO
												76 ¹
												13 SDPE + 3 HDX-IO
												58 ¹
												14 SDPE + 2 HDX-IO
												40 ¹
												15 SDPE + 1 HDX-IO
												22 1
HDMI Inputs/Outputs	3	3	1	1	1	1	×	×	×	✓ ²	√ ²	√ ²
NDI Inputs/Outputs	×	×	×	×	×	×	8, 12, or 18	×	×	×	×	×
MADI Audio Inputs/Outputs	×	×	X	X	X	X	×	X	64	Ultrix	Ultrix	Ultrix
										with SDI SFP modules, and dedicat Note: Each SDPE blade = one (1) Ca matrix in groups of up to eighteen directly available on the SDPE blad	epulated with HDX-IO boards, Aux Port ted SDPE inputs are fully populated. In the switcher which can access the In (18). An additional four (4) SDI inputs te. Tesult in different matrix sizes. Contact	e router I/O and outputs are
										² Via optional SFP HDMI Aux ports. F populated SFP cages. Contact Ros	HDMI input/output count dependent of some solutions of the solutions of th	on number of
END: = Supported						Spe	cifications	subject to change v	without notice			

								IP INPU	TS & OUTPUTS									
ROSS	CA	RBONI			GR	RAPH	TE	CARBONITE UIGIA	CARBONITE UTG 60			U	Itrix C	CARB	ONIT	E		
MOOD	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE	GRAPHITE PPC	GRAPHITE CPC	CARBONITE ULTRA	CARBONITE ULTRA 60 NOTE: Support for SD & UHD formats available late 2023		FR2	NOTE: Fi	gures below repre		ite ST-2110 Inputs an	d Outputs	FR12	
	SD/HD	SD/HD	SD/HD	SD/HD	SD/HD	SD/HD	SD/HD	SD/HD/UHD	SD/HD/UHD	HD	UHD	UHD	HD	UHD	UHD	HD	UHD	UHD
										1 SDPE 2 IP-IO/IPX-IO	1 SDPE 2 IP-IO	1 SDPE 2 IPX-IO	1 SDPE 8 IP-IO/IPX-IO	1 SDPE 8 IP-IO	1 SDPE 8 IPX-IO	1 SDPE 15 IP-IO/IPX-IO	1 SDPE 15 IP-IO	1 SDPE 15 IPX-IO
										2022-6 32 + 32 ¹		2022-6 2022-7	2022-6	2022-6 2022-7 32+32 ¹ 64 ¹		2022-6 240 + 240 ¹	2022-6 2022-7 60 + 60 1 120 1	
										2 SDPE	2 SDPE	2 SDPE	2 SDPE	2 SDPE	2 SDPE	2 SDPE	2 SDPE	2 SDPE
										1 IP-IO/IPX-IO 2022-6		1 IPX-IO 2022-6 2022-7	7 IP-IO/IPX-IO 2022-6		7 IPX-IO 2022-6 2022-7	14 IP-IO/IPX-IO 2022-6	2022-6 2022-7	
										16 + 16 ¹	4+41 81	8'	111 + 111 ¹ 3 SDPE	28+28 ¹ 56 ¹ 3 SDPE	56 ¹ 3 SDPE	224 + 224 ¹ 3 SDPE	56+56 ¹ 112 ¹ 3 SDPE	112 ¹ 3 SDPE
													6 IP-IO/IPX-IO 2022-6	6 IP-IO 2022-6 2022-7	6 IPX-IO 2022-6 2022-7	13 IP-IO/IPX-IO 2022-6	13 IP-IO 2022-6 2022-7	13 IPX-IO 2022-6 2022-7
													95 + 95 ¹ 4 SDPE	24+24 ¹ 48 ¹ 4 SDPE	48 ¹ 4 SDPE	208 + 208 ¹ 4 SDPE	52 + 52 ¹ 104 ¹ 4 SDPE	104 ¹ 4 SDPE
													5 IP-IO/IPX-IO	5 IP-IO	5 IPX-IO	12 IP-IO/IPX-IO	12 IP-IO	12 IPX-IO
													2022-6 79 + 79 ¹	2022-6 2022-7 20+20 ¹ 40 ¹	2022-6 2022-7 40 ¹	2022-6 192 + 192 ¹	2022-6 2022-7 48 + 48 ¹ 96 ¹	96 ¹
																5 SDPE 11 IP-IO/IPX-IO	5 SDPE 11 IP-IO	5 SDPE 11 IPX-IO
																2022-6 176 + 176 ¹	2022-6 2022-7 44+44 ¹ 88 ¹	2022-6 2022-7 88 ¹
																6 SDPE 10 IP-IO/IPX-IO	6 SDPE	6 SDPE 10 IPX-IO
																2022-6	2022-6 2022-7	2022-6 2022-7
																160 + 160 ¹ 7 SDPE	7 SDPE	80 ¹ 7 SDPE
																9 IP-IO/IPX-IO 2022-6	9 IP-IO 2022-6 2022-7	9 IPX-IO 2022-6 2022-7
																144 + 144 ¹ 8 SDPE	36+36 ¹ 72 ¹ 8 SDPE	72 ¹ 8 SDPE
SDI Inputs/Outputs	×	×	×	×	×	×	×	×	×							8 IP-IO/IPX-IO 2022-6		8 IPX-IO
																128 + 128 ¹	32 + 32 ¹ 64 ¹	64 1
																9 SDPE 7 IP-IO/IPX-IO		9 SDPE 7 IP-IO
																2022-6 112 + 112 ¹	2022-6 2022-7 28 + 28 ¹ 56 ¹	2022-6 2022-7 56 ¹
																10 SDPE 6 IP-IO/IPX-IO	10 SDPE 6 IP-IO	10 SDPE 6 IP-IO
																2022-6 96 + 96 ¹	2022-6 2022-7 24+24 ¹ 48 ¹	
																11 SDPE	11 SDPE	11 SDPE
																5 IP-IO/IPX-IO 2022-6	5 IP-IO 2022-6 2022-7	5 IP-IO 2022-6 2022-7
																80 + 80 1 12 SDPE	20 + 20 1 40 1 12 SDPE	40 ¹ 12 SDPE
																4 IP-IO/IPX-IO 2022-6		4 IP-IO 2022-6 2022-7
																64 + 64 ¹ 13 SDPE	16+16 ¹ 32 ¹ 13 SDPE	32 ¹ 13 SDPE
																3 IP-IO/IPX-IO 2022-6		3 IP-IO
																48 + 48 ¹	12 + 12 ¹ 24 ¹	24 1
																14 SDPE 2 IP-IO/IPX-IO		14 SDPE 2 IP-IO
																2022-6 32 + 32 ¹	2022-6 2022-7 8+8 ¹ 16 ¹	2022-6 2022-7
																15 SDPE 1 IP-IO/IPX-IO	15 SDPE 1 IP-IO	15 SDPE 1 IPX-IO
																2022-6 16 + 16 ¹	2022-6 2022-7	
	L		1	1	<u> </u>	1	I	l	1							ovide up to an additi	onal eighteen (18) SDI inp	
										SDPE blade.	blade = one (1) Carbonit complement will result i				eignteen (18). An additio	mai four (4) SDI înpu	its and outputs are direct	ly available on the
LEGEND: = Supported								Specification	s subject to char					- Carana				
= Unsupported												· • · · · · · · · · · · · · · · · · · ·						

						FRA	AME FEAT	ΓURES (SD/HD)				
ROSS	CA	RBONI'	TEBLAY S(GR	APHI		CARBONITE	CARBONITE UMA60	Ultrìx	CARBO	NITE
MOCO	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE	GRAPHITE PPC	GRAPHITE CPC	CARBONITE ULTRA	CARBONITE ULTRA 60	FR2	FR5	FR12
									NOTE: Support for SD & UHD formats available late 2023			
ME Banks	1	1	1	1	1 or 2	1 or 2	3	1, 2 or 3 (4-Keyer Mode) 2 (6-Keyer Mode) ¹	3	1, 2 or 3 per SDPE Blade	1, 2 or 3 per SDPE Blade	1, 2 or 3 per SDPE Blade
MiniME Banks	2 (Gen 1) ²	2 (Gen 1) ²	2 (Gen 1) ²	2 (Gen 1) ²	4 (Gen 1) ²	4 (Gen 1) ²	×	4 (Gen 2) ³	4 (Gen 2) ³	4 (Gen 2) ³ per SDPE Blade (1 or 2 ME modes only) ⁴	4 (Gen 2) ³ per SDPE Blade (1 or 2 ME modes only) ⁴	4 (Gen 2) ³ per SDPE Blade (1 or 2 ME modes only) ⁴
Keyers per ME	5 (4 Full Keyers + 1 Transition Keyer)	6 (Full Keyers)	5 (4 Full Keyers + 1 Transition Keyer) (4-Keyer Mode) 7 (6 Full Keyers + 1 Transition Keyer) (6-Keyer Mode)	7 (6 Full Keyers + 1 Transition Keyer)	7 (6 Full Keyers + 1 Transition Keyer)	7 (6 Full Keyers + 1 Transition Keyer)	7 (6 Full Keyers + 1 Transition Keyer)					
Keyers per MiniME	2	2	2	2	2	2	×	2	2	2 (1 or 2 ME modes only) ⁴	2 (1 or 2 ME modes only) ⁴	2 (1 or 2 ME modes only) ⁴
2D DVEs	2	2	2	2	4	4	18	8	12	12	12	12
DVE Border Y-Perspective	X	X	X	X	X	X	X	✓	✓	✓	✓	✓
UltraChrome Chroma Keyers	1	1	1	1	2	2	X	4	4	4	4	4
UltraScene Advanced Compositing Engine	X	×	×	×	×	X	×	4 pairs	4 pairs	4 pairs	4 pairs	4 pairs
Sequencer	X	X	X	×	×	X	X	5	5	5	5	5
Portrait Rotation Mode	X	X	X	X	X	X	X	3 Outputs	Up to 15	×	×	×
Input FSFC	6	6	6	6	6	6	X	Up to 24	Up to 60	Up to 22	Up to 22	Up to 22
Input Colour Correctors/ Proc Amps	×	×	×	×	×	×	×	Up to 24	Up to 60	Up to 22	Up to 22	Up to 22
Input SDR <> HDR Conversion	X	×	×	×	×	X	X	Up to 24	Up to 60	Up to 22	Up to 22	Up to 22
Input Rec 709 <> Rec 2020 Conversion	×	×	×	×	×	×	×	Up to 24	Up to 60	Up to 22	Up to 22	Up to 22
Output FC	X	×	×	×	×	X	X	Up to 10	Up to 10	×	×	×
Output SDR <> HDR Conversion	X	X	×	×	X	X	X	Up to 10	Up to 20	×	×	×
Output Rec 709 <> Rec 2020 Conversion	×	×	×	×	×	×	×	Up to 10	Up to 20	×	×	×
I/O MultiViewers	×	×	×	×	×	×	×	Up to 2	Up to 5	Ultriscape (Up to 3 per HDB/SFP or 2 per IP blade)	Ultriscape (Up to 3 per HDB/SFP or 2 per IP blade)	Ultriscape (Up to 3 per HDB/SFP or 2 per IP blade)
Production MultiViewers	1	1	1	1	2	2	1	Up to 2	1	2	2	2
MultiViewer Timers	X	X	×	X	5	5	X	✓	✓	Ultriscape	Ultriscape	Ultriscape
MediaStores	4 x video or 2 x video/key	×	4 x video or video/key	6 x video or video/key	4 x video or video/key	4 x video or video/key	4 x video or video/key					
Audio MediaStore	MediaStore 1 & 2	X	MediaStore 1 & 2	MediaStore 1 & 2	MediaStore 1 & 2	MediaStore 1 & 2	MediaStore 1 & 2					
MediaStore RAM Capacity	8GB (Shared)	8GB (Shared)	8GB (Shared)	8GB (Shared)	2GB (Shared)	2GB (Shared)	N/A	8GB (Shared)	12GB (Shared)	8GB (Shared)	8GB (Shared)	8GB (Shared)
USB Media Player	√	√	✓	√	X	X	X	✓	✓	✓	✓	✓
Internal SSD Capacity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1TB (800GB User-accessible)	N/A	N/A	N/A

¹ 6-Keyer Mode requires CUF-ADD-ME3 License. Contact Ross Video for more details

² Gen 1 MiniME Banks provide one (1) DVE Keyer and one (1) full-function keyer

³ Gen 2 MiniME Banks provide two (2) full-function keyers

⁴ MiniMEs not available in 3 ME mode



						FR	AME FEA	TURES (SD/HD)				
ROSS	CA	RBONI	TEBLAY SC		GR	APHI	TE	CARBONITE Ultia	CARBONITE UMA60	Ultrìx	CARBO	NITE
	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE	GRAPHITE PPC	GRAPHITE CPC	CARBONITE ULTRA	CARBONITE ULTRA 60	FR2	FR5	FR12
									NOTE: Support for SD & UHD formats available late 2023			
Audio Mixer	×	×	×	×	✓	✓	✓	✓	✓	Ultrimix	Ultrimix	Ultrimix
Audio Aux Mix Reentry	X	×	×	X	\checkmark	✓	✓	\checkmark	✓	×	×	×
Multiple AFV Source Triggers	×	×	×	×	√	√	✓	\checkmark	✓	×	×	×
Memory/Custom Control Export	X	×	×	X	√ ⁵	√ 5	×	√ ⁵	√ 5	√ 5	√ ⁵	√ ⁵
Dual GPI Events	×	×	×	×	✓	✓	×	\checkmark	✓	✓	✓	✓
Frame Simulator (DashBoard)	X	×	×	X	\checkmark	\checkmark	X	\checkmark	✓	✓	\checkmark	✓
Ross Platform Manager (RPM) Support	×	×	×	×	×	×	×	\checkmark	✓	✓	✓	✓
XPression LivcCG	\checkmark	✓	\checkmark	\checkmark	×	X	×	\checkmark	✓	\checkmark	✓	✓
XPression Prime	×	×	×	×	√	√	✓	×	×	×	×	×
⁵ Export function supported for Graphi	te, Carbonite Ultr	a, Carbonite Ultra (60, and Ultrix Carb	onite only								

LEGEND: = Supported

X = Unsupported

Specifications subject to change without notice.

						FF	RAME FEA	TURES (UHD)				
ROSS	CA	RBONI	TEBLA S		GR	APH	TE	CARBONITE UIGA	CARBONITE UT 60	Ultrix	CARBO	NITE
	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE	GRAPHITE PPC	GRAPHITE CPC	CARBONITE ULTRA	CARBONITE ULTRA 60 NOTE: Support for SD & UHD formats available late 2023	FR2	FR5	FR12
ME Banks	×	×	×	X	X	X	×	1 or 2	Up to 3	1 or 2 per SDPE Blade	1 or 2 per SDPE Blade	1 or 2 per SDPE Blade
MiniME Banks	×	×	×	×	×	×	×	2 (Gen 2) ¹	2 (Gen 2) ¹	2 (Gen 2) ¹ per SDPE Blade	2 (Gen 2) ¹ per SDPE Blade	2 (Gen 2) ¹ per SDPE Blade
Keyers per ME	×	×	×	×	×	×	×	5 (4 Full Keyers + 1 Transition Keyer)	5 (4 Full Keyers + 1 Transition Keyer)	7 (6 Full Keyers + 1 Transition Keyer)	7 (6 Full Keyers + 1 Transition Keyer)	7 (6 Full Keyers + 1 Transition Keyer)
Keyers per MiniME	×	X	X	X	X	X	×	2	2	2	2	2
2D DVEs	×	×	×	×	×	×	×	4	6	6	6	6
DVE Border Y-Perspective	×	×	×	X	X	X	×	✓	✓	✓	✓	✓
UltraChrome Chroma Keyers	×	×	×	×	X	×	×	2	2	2	2	2
UltraScene Advanced Compositing Engine	×	×	×	×	×	×	×	×	×	×	×	×
Sequencer	×	×	×	X	X	X	×	5	5	5	5	5
Portrait Rotation Mode	×	×	×	X	X	X	×	×	×	×	×	×
Input FSFC	×	×	×	×	X	×	×	Up to 7	Up to 40	Up to 4	Up to 4	Up to 4
Input Colour Correctors/ Proc Amps	×	×	×	×	×	×	×	Up to 8	Up to 20	Up to 4	Up to 4	Up to 4
Input SDR <> HDR Conversion	×	×	×	×	×	×	×	Up to 8	Up to 20	Up to 4	Up to 4	Up to 4
Input Rec 709 <> Rec 2020 Conversion	×	×	×	×	×	×	×	Up to 8	Up to 20	Up to 4	Up to 4	Up to 4
Output FC	×	×	×	×	X	×	×	Up to 4	Up to 20	×	×	×
Output SDR <> HDR Conversion	×	×	×	X	X	×	×	Up to 4	Up to 20	×	×	×
Output Rec 709 <> Rec 2020 Conversion	×	×	×	×	×	×	×	Up to 4	Up to 20	×	×	×
I/O MultiViewers	×	×	×	×	×	×	×	Up to 1	Up to 5	Ultriscape (Up to 3 per HDB/SFP or 2 per IP blade)	Ultriscape (Up to 3 per HDB/SFP or 2 per IP blade)	Ultriscape (Up to 3 per HDB/SFP or 2 per IP blade)
Production MultiViewers	×	×	×	×	X	×	×	1	1	1	1	1
MultiViewer Timers	X	×	×	X	X	×	X	✓	✓	Ultriscape	Ultriscape	Ultriscape
Gen 2 MiniME Banks provide two (2) full-fund	tion keyers											

LEGEND: = Supported

X = Unsupported

						FF	RAME FEA	TURES (UHD)				
ROSS	CA	RBONI	TEBLA S		GR	APH	ITE	CARBONITE	CARBONITE UM 60	Ultrix	CARBO	NITE
	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE	GRAPHITE PPC	GRAPHITE CPC	CARBONITE ULTRA	CARBONITE ULTRA 60 NOTE: Support for SD & UHD formats available late 2023	FR2	FR5	FR12
MediaStores	×	X	×	X	X	X	×	2 x video or video/key	6 x video or video/key	4 x video or video/key	4 x video or video/key	4 x video or video/key
Audio MediaStore	X	X	X	X	X	X	×	MediaStore 1 & 2	MediaStore 1 & 2	MediaStore 1 & 2	MediaStore 1 & 2	MediaStore 1 & 2
MediaStore RAM Capacity	8GB (Shared)	8GB (Shared)	8GB (Shared)	8GB (Shared)	2GB (Shared)	2GB (Shared)	N/A	8GB (Shared)	12GB (Shared)	8GB (Shared)	8GB (Shared)	8GB (Shared)
USB Media Player	X	X	×	X	X	X	×	×	×	×	×	×
Internal SSD Capacity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1TB (800GB User-accessible)	N/A	N/A	N/A
Audio Mixer	X	X	X	X	X	X	×	✓	✓	Ultrimix	Ultrimix	Ultrimix
Audio Aux Mix Re-Entry	×	X	X	X	X	X	✓	✓	✓	×	×	×
Multiple AFV Source Triggers	×	X	X	×	X	X	✓	✓	✓	×	×	×
Memory/Custom Control Export	×	×	×	×	× 5	×	×	✓ ² 2	√ ²	√ ²	✓ ²	√ ²
Dual GPI Events	×	X	X	X	X	X	×	✓	✓	✓	✓	✓
Frame Simulator (DashBoard)	×	X	X	×	X	X	×	✓	✓	✓	✓	✓
Ross Platform Manager (RPM) Support	×	×	×	×	×	×	×	✓	✓	✓	✓	✓
XPression LivcCG	✓	✓	√	✓	X	X	×	✓	✓	✓	✓	✓
XPression Prime	X	X	X	X	✓	✓	√	×	×	×	×	×
Export function supported for Graph	ite, Carbonite Ultı	ra, Carbonite Ultra	a 60, and Ultrix Car	bonite only								
LEGEND:						Spe	cifications	subject to change v	vithout notice.			

						SU	JPPORTEI	D PROTOCOLS				
ROSS	CA	RBONI	TEBLAY So		GR	APH	ITE	CARBONITE UITA	CARBONITE UIGG60	Ultrìx	CARBO	NITE
	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE	GRAPHITE PPC	GRAPHITE CPC	CARBONITE ULTRA	CARBONITE ULTRA 60	FR2	FR5	FR12
INBOUND												
RossTalk	V	V	V	V	V	√	V	▼	▼	<u> </u>	✓	✓
OverDrive / Caprica	√	√	√	✓	✓	√	√	✓	✓	✓	✓	✓
TSL 3.1	✓	✓	✓	✓	✓	√	✓	✓	✓	√	✓	✓
TSL 5.0	×	×	×	X	×	X	×	\checkmark	✓	\checkmark	✓	\checkmark
GVG 100/110	✓	√	√	✓	√	√	×	✓	✓	✓	✓	✓
GVG 200, 4000	×	X	X	X	X	X	×	×	×	×	×	×
OUTBOUND												
AMP	✓	✓	✓	✓	✓	✓	✓	✓	✓	\checkmark	✓	✓
RossTalk	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TSL 3.1	√	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
TSL 5.0	X	X	X	X	X	X	X	✓	✓	✓	✓	✓
Ross CamBot	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Visca (Serial)	✓	✓	✓	✓	✓	✓	X	✓	✓	✓	✓	✓
Canon BU series	✓	✓	✓	✓	✓	√	X	✓	✓	✓	✓	✓
PBUS II	✓	√	✓	✓	✓	√	X	✓	✓	√	✓	√
VDCP	X	×	X	X	X	×	X	×	×	×	×	×
SEND: = Supported	1	1	ı		·	Spe	cifications	subject to change v	vithout notice.			·

		X	PRESSION G	RAPHITE FEA	ATURES		RAVE A	JDIO FEATUR	RES
ROSS	X	Pressi			XPressic	Clips		AVE	
Scene/Template Designer	Prime	Studio Single	Studio Dual	Studio Flex	Dedicated Playback	ALL MODELS 2	Stereo Faders	GRAPHITE 48	GRAPHITE PPC 48
Playout Sequencer	<u> </u>	✓	✓	✓	Server Channels Dedicated Ingest	1	Fader Volume	-∞db to + 20db	-∞db to + 20db
2D/3D Fonts	<u> </u>	→	→	✓	Server Channels Crash Record	✓	Pre/Post-Fade Meters	✓	✓
Arabic. Asian & Scipted Font Support	✓	✓	✓	✓	Still Video Input Grabber	✓	Pre/Post-Fade Peak Indicators	✓	✓
3D Primitives	✓	✓	✓	✓	Single-Channel Transitions	✓	Per-Channel EQ & Clip Indicators	✓	✓
3D Model Support	×	✓	✓	✓	Clip Trimming	✓	Per Channel Mute, Solo, & Pre-Fade Listen (PFL)	✓	✓
Template Video Clip Support	✓	✓	✓	✓	Subclipping	✓	Per Channel Mute, Solo, & PFL Clear	✓	✓
Project Video Format Conversion	✓	✓	✓	✓	Clip Database Management	✓	Per Channel EQ Control	4-band (high-shelf, dual midrange, low-shelf)	4-band (high-shelf, dual midrange, low-shelf)
Animation Timeline	✓	✓	✓	✓	Preview/Program Operation	✓	Per Channel Compression/Limiting (Assignable pre- or post-EQ)	Variable Threshold, Compression, Attack, Release & Makeup parameters	Variable Threshold, Compression, Attack, Release & Makeup parameters
Graphical Keyframe Editor	✓	✓	✓	✓	AMP Control	✓	Per Channel Noise Gate Controls	Variable Threshold, Depth, Reduction, Attack, Hold & Release parameters	Variable Threshold, Depth, Reduction, Attack, Hold & Release parameters
Continuous Animations	✓	✓	✓	✓			Per Channel Ducking Controls	Variable Threshold, Depth, Mix Reduction, Attack, Hold & Release parameters	Variable Threshold, Depth, Mix Reduction, Attack, Hold & Release parameters
Stagger Animations	✓	✓	✓	✓			Per Channel Talkback Controls	Variable Threshold, Depth, Mix Reduction, Attack, Hold & Release parameters	Variable Threshold, Depth, Mix Reduction, Attack, Hold & Release parameters
Transition Logic	×	✓	✓	✓			Per Channel Audio Follow Video mode (AFV)	✓	✓
Visual Logic	✓	✓	✓	✓			Multiple AFV Triggers per Channel	✓	✓
XPrcsslon Video Codec License	✓	✓	✓	✓			Aux Mixers	12	12
XPrcsslon Video Coder Application	✓	✓	✓	✓			Audio Aux Mix Reentry	✓	✓
.NET Based Scripting	×	✓	✓	✓			Per Channel Balance Controls (Stereo Inputs)	✓	✓
.NET / COM Automation API	×	✓	✓	✓			Per Channel Pan Controls (Mono Inputs)	✓	✓
Virtual Cameras	✓	✓	✓	✓			Mono Mode	Duplication of Mono channel (L or R) to create L-L / R-R channel pair	Duplication of Mono channe (L or R) to create L-L/R-R channel pair
Live Input Shader (Apply Live Video to Surfaces)	✓	✓	✓	✓			Maximum Embedded Audio Input Channels	16 per SDI Input	16 per SDI Input
Render To AVI Output	✓	✓	✓	✓			Maximum Embedded Audio Output Channels	16 per SDI Output	16 per SDI Output
Export Template to Image/Video File	✓	✓	✓	✓			16-Channel Sample Rate Converters	Available on SDI inputs 1 - 6	Available on SDI inputs 1 - 6
Maximum Video Input Channels	1	1	2	4			DashBoard Control	✓	✓
Maximum Video Preview Channels	0	1	2	2			External MIDI Control	Behringer X-Touch Mini, Compact or compatible	Behringer X-Touch Mini, Compact or compatible
Virtual Preview Channels (up next & look-ahead)	2 Per Channel	2 Per Channel	2 Per Channel	2 Per Channel			NOTE: RAVE Audio optional for Graphite, Ca	arbonite Ultra, and Carbonite U	ltra 60 only.
Maximum Output Channels (fill + key)	1	1	2	4					
Output Format Set by Switcher	✓	✓	✓	✓					
Maximum Embedded Audio Channels	16	16	16	16					
AES Audio	✓	✓	✓	✓					
Video Bypass (Hardware Failure & Software Watchdog)	✓ ¹	✓ 1	✓ 1	✓ 1					
GPI Contact Closure	√ ¹	√ 1	✓ 1	√ ¹					
Keyboard/GPI Mapping	√	√	√	√					
Custom Keyboard Support					I				

¹ Graphite & Graphite PPC only.

NOTE: Some XPression features optional. Please contact Ross Video for complete details.

Custom Keyboard Support

Multi-Channel Editions Available

Advanced Workflow Tools Available

						PANE	L COMP	ATIBILITY	′				
ROSS	DIMENSIONS	CARBONITE	CA	RBONIT	TEBLA S	CK OLO	GR	APH	TE	CARBONITE	CARBONITE UIGA	CARBONITE UIGG60	Ultrix CARBONITE
C10 (CPS-1012)	W x H 15.85 x 10.77 (in.) 402.59 x 273.56 (mm)	ALL MODELS	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE 1	GRAPHITE PPC ✓	GRAPHITE CPC	ALL MODELS	CARBONITE ULTRA	CARBONITE ULTRA 60	ALL MODELS X
C1 (CPS-1016)	21.70 x 10.76 (in.) 551.18 x 273.30 (mm)	✓	×	1, 2	×	1, 2	√ ¹	✓ ¹	×	✓	×	×	×
CIA	24.70 x 12.49 (in.) 627.4 x 317.2 (mm)	✓	×	1, 2	×	1, 2	√ ¹	√ ¹	×	✓	√ 1	√ 1	1
C1M	29.77 x 12.48 (in.) 756.16 x 317.1 (mm)	✓	×	1, 2	×	1, 2	√	√	×	✓	1	√	√ 1
C2	24.71 x 18.24 (in.) 627.6 x 463.2 (mm)	✓	×	1, 2	×	1, 2	√ ¹	√ 1	×	✓	√ 1	1	√ ¹
C2M	29.77 x 18.23 (in.) 756.16 x 462.99 (mm)	✓	×	1, 2	×	1, 2	√ 1	√	×	✓	√	1	1
C2S	33.74 x 18.25 (in.) 857.1 x 463.6 (mm)	✓	×	1, 2	×	1, 2	√ 1	√ 1	×	✓	1	1	1
C2X	39.48 x 18.25 (in.) 1002.7 x 463.6 (mm)	✓	×	1, 2	×	1, 2	√	√	×	✓	√	1	1
C3S	33.75 x 24.13 (in.) 857.1 x 613.0 (mm)	✓	×	1, 2	×	1, 2	√ ¹	√ 1	×	✓	√ 1	√ 1	√ 1
C3X	39.48 x 24.13 (in.) 1002.7 x 612.9 (mm)	✓	×	1, 2	×	1, 2	√	1	×	✓	1	1	1
CB9	16.20 x 10.06 (in.) 411.48 x 255.52 (mm)	✓	×	✓	×	✓	√	✓	✓	√ 3	✓	✓	✓
CB1	23.42 x 10.72 (in.) 594.9 x 272.3 (mm)	✓	×	✓	×	✓	✓	✓	✓	✓	✓	✓	✓
CB1S NOTE: Frame - Panel connection uses	32.51 x 10.72 (in.) 825.8 x 272.3 (mm)	✓	×	✓	×	✓	✓	✓	✓	✓	✓	✓	✓

¹ Requires CarboNet Serial - Ethernet Adaptor. Contact Ross Video for details.

² Requires v. 2.0 or higher software. Contact Ross Video for details.

³ Requires v. 13.0 or higher software. Contact Ross Video for details.

LEGEND: = Supported

x = Unsupported

						PANE	EL COMP	ATIBILIT'	Y				
ROSS	DIMENSIONS	CARBONITE	CA	RBONI	TEBLA S	CK OLO	GR	APH	ITE	CARBONITE	CARBONITE Ultia	CARBONITE UMARIO	Ultrìx CARBONITE
	WxH	ALL MODELS	SOLO	CBF 109	SOLO 13	CBF 113	GRAPHITE	GRAPHITE PPC	GRAPHITE CPC	ALL MODELS	CARBONITE ULTRA	CARBONITE ULTRA 60	ALL MODELS
CB2	23.42 x 16.24 (in.) 594.9 x 412.6 (mm)	✓	×	✓	×	✓	✓	✓	✓	✓		✓	✓
CB2S	32.51 x 16.24 (in.) 825.8 x 412.6 (mm)	✓	×	✓	×	✓	✓	✓	✓	✓	✓	✓	✓
CB3S	32.51 x 21.76 (in.) 825.7 x 552.8 (mm)	✓	×	√	×	✓	✓	✓	✓	✓		✓	✓
CB3X	38.19 x 21.76 (in.) 970.0 x 552.8 (mm)	✓	×	✓	×	✓	✓	✓	✓	✓	√	✓	✓
TDIC	17.50 x 12.91 (in.) 444.5 x 327.91 (mm)	✓	×	×	×	×	✓	✓	✓	✓	✓	✓	✓
TD1	28.29 x 10.08 (in.) 718.6 x 256.0 (mm)	✓	×	×	×	×	✓	✓	✓	✓	✓	✓	✓
TD2	28.29 x 16.31 (in.) 718.6 x 414.4 (mm)	✓	×	×	×	×	✓	✓	✓	✓	✓	✓	✓
TD2S	41.00 x 16.31 (in.) 1041.4 x 414.4 (mm)	✓	×	×	×	×	✓	✓	✓	✓	✓	✓	✓
TD3S	41.00 x 22.55 (in.) 1041.4 x 572.6 (mm)	✓	×	×	×	×	✓	✓	✓	✓	✓	✓	✓
OTE: Frame - Panel connection uses	Ethernet protocol unl	ess otherwise noted											
END: = Supported						Specific	ations sub	iect to cha	nge witho	ut notice.			

LEGEND: X = Unsupported