



# LASER DIAGNOSTICS PRODUCT LIST

For inquiries and pricing please contact us at [sales@alphalas.com](mailto:sales@alphalas.com)

Product list effective from 2023-02-01. Specifications are subject to change without prior notice.  
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Laser Diagnostic Tools			
Item	Part Number	DESCRIPTION	Price
<b>Ultrafast Photodetectors: UPD Series</b>			
1.	UPD-10-IR2-FR	<b>NEW! Ultrafast InGaAs Photodetector with fiber receptacle</b> , rise time typ. 10 ps, bandwidth > 32 GHz, spectral range: 900 ... 1650 nm, fiber receptacle: FC/PC connector. 2.92 mm K-connector for electrical signal output. Universal power supply 100 ... 230 V AC included.	contact us
2.	UPD-15-IR2-P	<b>NEW! Ultrafast InGaAs Photodetector</b> , rise time typ. 15 ps, bandwidth > 25 GHz, spectral range 800 ... 1700 nm, for <i>free-space beam</i> , polished glass window, SMA connector for the RF output. Needs +5 VDC supply.	contact us
3.	UPD-15-IR2-FC	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 15 ps, bandwidth > 25 GHz, spectral range 800 ... 1700 nm, <i>1 m long SM fiber, with FC/APC</i> , SMA connector for the RF output. Not compatible with the optional filter holder. Needs +5 VDC supply.	contact us
4.	UPD-15-UVIR-FC	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 15 ps, bandwidth > 25 GHz, <b>spectral range 350 ... 1700 nm</b> , <i>1 m long SM fiber, with FC/APC</i> , SMA connector for the RF output. Not compatible with the optional filter holder. Needs +5 VDC supply.	contact us
5.	UPD-35-IR2-P	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 35 ps, bandwidth > 10 GHz, spectral range 800 ... 1700 nm, polished glass window, SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
6.	UPD-35-IR2-D	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 35 ps, bandwidth > 10 GHz, spectral range 800 ... 1700 nm, crystal quartz diffuse window (recommended for high peak power lasers only), SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
7.	UPD-35-UVIR-D	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 35 ps, bandwidth > 10 GHz, spectral range <b>350 ... 1700 nm</b> , crystal quartz diffuse window (recommended for high peak power lasers only), SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us



8.	UPD-35-UVIR-P	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 35 ps, bandwidth > 10 GHz, spectral range <b>350 ... 1700</b> nm, polished window MgF <sub>2</sub> , SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
9.	UPD-35-IR2-FR-S	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 35 ps, bandwidth > 10 GHz, spectral range 800 ... 1700 nm, SMA receptacle, SMA connector for the RF output. Not compatible with the optional filter holder. Needs +12 VDC supply or bias battery.	contact us
10.	UPD-35-IR2-FR-F	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 35 ps, bandwidth > 10 GHz, spectral range 800 ... 1700 nm, FC/PC receptacle, SMA connector for the RF output. Not compatible with the optional filter holder. Needs +12 VDC supply or bias battery.	contact us
11.	UPD-35-UVIR-FC-A	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 35 ps, bandwidth typ. > 10 GHz, spectral range 350 ... 1700 nm, with SMF-28 fiber 1 m length, with FC/APC, SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
12.	UPD-35-IR2-FC	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 35 ps, bandwidth typ. > 10 GHz, spectral range 800 ... 1700 nm, with SMF-28 fiber 1 m length, with FC/APC, SMA connector for the RF output. Not compatible with the optional filter holder. Needs +12 VDC supply or bias battery.	contact us
13.	UPD-35-UVIR-FR-P	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 35 ps, bandwidth typ. > 10 GHz, spectral range 350 ... 1700 nm, <b>with FC/PC fiber receptacle</b> , SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
14.	UPD-40-IR2-P	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 40 ps, bandwidth > 8.5 GHz, spectral range 800 ... 1700 nm, polished glass window, SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
15.	UPD-40-IR2-D	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 40 ps, bandwidth > 8.5 GHz, spectral range 800 ... 1700 nm, crystal quartz diffuse window (recommended for high peak power lasers only), SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
16.	UPD-40-UVIR-D	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 40 ps, bandwidth > 8.5 GHz, spectral range <b>350 ... 1700</b> nm, crystal quartz diffuse window (recommended for high peak power lasers only), SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
17.	UPD-40-UVIR-P	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 40 ps, bandwidth > 8.5 GHz, spectral range <b>350 ... 1700</b> nm, polished window MgF <sub>2</sub> , SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
18.	UPD-40-IR2-FR-S	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 40 ps, bandwidth > 8.5 GHz, spectral range 800 ... 1700 nm, SMA receptacle, SMA connector for the RF output. Not compatible with the optional filter holder. Needs +12 VDC supply or bias battery.	contact us



19.	UPD-40-IR2-FR-F	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 40 ps, bandwidth > 8.5 GHz, spectral range 800 ... 1700 nm, FC/PC receptacle, SMA connector for the RF output. Not compatible with the optional filter holder. Needs +12 VDC supply or bias battery.	contact us
20.	UPD-40-IR2-FC	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 40 ps, bandwidth > 8.5 GHz, spectral range 800 ... 1700 nm, with 1 m long SMF-28 fiber, with FC/APC, SMA connector for the RF output. Not compatible with the optional filter holder. Needs +12 VDC supply or bias battery.	contact us
21.	UPD-50-SP	<b>Ultrafast Si Photodetector</b> , rise time typ. 50 ps, bandwidth > 7.0 GHz, spectral range 320 ... 1100 nm, polished window, SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
22.	UPD-50-SD	<b>Ultrafast Si Photodetector</b> , rise time typ. 50 ps, bandwidth > 7.0 GHz, spectral range 320 ... 1100 nm, crystal quartz diffuse window (recommended for high peak power lasers only), SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
23.	UPD-50-UD	<b>Ultrafast Si Photodetector</b> , rise time typ. 50 ps, bandwidth > 7.0 GHz, spectral range <b>170 ... 1100</b> nm, crystal quartz diffuse window (recommended for high peak power lasers only), SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
24.	UPD-50-UP	<b>Ultrafast Si Photodetector</b> , rise time typ. 50 ps, bandwidth > 7.0 GHz, spectral range <b>170 ... 1100</b> nm, polished window MgF <sub>2</sub> , SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
25.	UPD-50-SP-FR-F	<b>Ultrafast Si Photodetector</b> , rise time typ. 50 ps, bandwidth > 7.0 GHz, spectral range 320 ... 1100 nm, polished window, with fiber receptacle FC/PC, SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
26.	UPD-50-UP + UPD-40-IR2-P	<b>SPECIAL PACKAGE of TWO Ultrafast Photodetectors (Si and InGaAs)</b> , rise time typ. 40 ps, bandwidth > 8.5 GHz for UPD-40-IR2-P and rise time typ. 50 ps for UPD-50-UP, bandwidth typ. 7.0 GHz for UPD-50-UP. The combination covers the spectral range <b>170 ... 1700</b> nm, polished windows, SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us (20% less compared to individual buy)
27.	UPD-70-IR2-P	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 70 ps, bandwidth > 5.0 GHz, spectral range 800 ... 1700 nm, polished window, SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
28.	UPD-70-IR2-D	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 70 ps, bandwidth > 5.0 GHz, spectral range 800 ... 1700 nm, crystal quartz diffuse window (recommended for high peak power lasers only), SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us



29.	UPD-70-UVIR-D	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 70 ps, bandwidth > 5.0 GHz, spectral range <b>350 ... 1700</b> nm, crystal quartz diffuse window (recommended for high peak power lasers only), SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
30.	UPD-70-UVIR-P	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 70 ps, bandwidth > 5.0 GHz, spectral range <b>350 ... 1700</b> nm, polished window MgF <sub>2</sub> , SMA connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
31.	UPD-70-IR2-FR-S	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 70 ps, bandwidth > 5.0 GHz, spectral range 800 ... 1700 nm, SMA receptacle, SMA connector for the RF output. Not compatible with the optional filter holder. Needs +12 VDC supply or bias battery.	contact us
32.	UPD-70-IR2-FR-F	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 70 ps, bandwidth > 5.0 GHz, spectral range 800 ... 1700 nm, FC/PC receptacle, SMA connector for the RF output. Not compatible with the optional filter holder. Needs +12 VDC supply or bias battery.	contact us
33.	UPD-70-IR2-FC	<b>Ultrafast InGaAs Photodetector</b> , rise time typ. 70 ps, bandwidth > 5.0 GHz, spectral range 800 ... 1700 nm, with 1 m long SMF-28 fiber, with FC/APC, SMA connector for the RF output. Not compatible with the optional filter holder. Needs +12 VDC supply or bias battery.	contact us
34.	UPD-100-IR1-P	<b>Ultrafast Ge-doped-Photodetector</b> , rise time typ. 100 ps, bandwidth > 3.0 GHz, pulse width (FWHM) 300 ps, spectral range <b>400 ... 2000</b> nm, dark current typ. 700 nA, active area 80 µm diameter, polished window, SMA connector for the RF output, negative output. Needs -12 VDC negative supply or bias battery.	contact us
35.	UPD-200-SP	<b>Ultrafast Si Photodetector</b> , rise time typ. 175 ps, bandwidth typ. 2.0 GHz, spectral range 320 ... 1100 nm, polished window, BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
36.	UPD-200-SD	<b>Ultrafast Si Photodetector</b> , rise time typ. 175 ps, bandwidth typ. 2.0 GHz, spectral range 320 ... 1100 nm, crystal quartz diffuse window (recommended for high peak power lasers only), BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
37.	UPD-200-UD	<b>Ultrafast Si Photodetector</b> , rise time typ. 175 ps, bandwidth typ. 2.0 GHz, spectral range <b>170 ... 1100 nm</b> , crystal quartz diffuse window (recommended for high peak power lasers only), BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
38.	UPD-200-UP	<b>Ultrafast Si Photodetector</b> , rise time typ. 175 ps, bandwidth typ. 2.0 GHz, spectral range <b>170 ... 1100 nm</b> , polished window MgF <sub>2</sub> , BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
39.	UPD-300-SP	<b>Ultrafast Si Photodetector</b> , rise time typ. 300 ps, bandwidth typ. 1.0 GHz, spectral range 320 ... 1100 nm, polished window, BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us



40.	UPD-300-SD	<b>Ultrafast Si Photodetector</b> , rise time typ. 300 ps, bandwidth > 1.0 GHz, spectral range 320 ... 1100 nm, crystal quartz diffuse window (recommended for high peak power lasers only), BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
41.	UPD-300-UD	<b>Ultrafast Si Photodetector</b> , rise time typ. 300 ps, bandwidth > 1.0 GHz, spectral range <b>170 ... 1100</b> nm, crystal quartz diffuse window (recommended for high peak power lasers only), BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
42.	UPD-300-UP	<b>Ultrafast Si Photodetector</b> , rise time typ. 300 ps, bandwidth > 1.0 GHz, spectral range <b>170 ... 1100</b> nm, polished window MgF <sub>2</sub> , BNC connector. Needs +12 VDC supply or bias battery.	contact us
43.	UPD-500-SP	<b>Ultrafast Si Photodetector</b> , rise time typ. 500 ps, bandwidth > 0.6 GHz, spectral range 320 ... 1100 nm, polished window, BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
44.	UPD-500-SD	<b>Ultrafast Si Photodetector</b> , rise time typ. 500 ps, bandwidth > 0.6 GHz, spectral range 320 ... 1100 nm, crystal quartz diffuse window (recommended for high peak power lasers only), BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
45.	UPD-500-UD	<b>Ultrafast Si Photodetector</b> , rise time typ. 500 ps, bandwidth > 0.6 GHz, spectral range <b>170 ... 1100</b> nm, crystal quartz diffuse window (recommended for high peak power lasers only), BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
46.	UPD-500-UP	<b>Ultrafast Si Photodetector</b> , rise time typ. 500 ps, bandwidth > 0.6 GHz, spectral range <b>170 ... 1100</b> nm, polished window MgF <sub>2</sub> , BNC connector for the RF output. Needs +12 VDC supply or bias battery.	contact us
47.	UPD-3N-IR2-P	<b>Exclusively from ALPHALAS! Greatly improved performance!</b> <b>Ultrafast InGaAs PIN Photodetector</b> , rise time typ. 150 ps, FWHM typ. 1 ns, bandwidth > 400 MHz, spectral range <b>800 ... 2100</b> nm, polished window, BNC connector for the RF output. Needs +5 VDC supply or bias battery.	contact us
48.	UPD-5N-IR2-P	<b>Exclusively from ALPHALAS! Greatly improved performance!</b> <b>Ultrafast InGaAs PIN Photodetector</b> , rise time typ. 200 ps, FWHM typ. 1 ns, bandwidth > 300 MHz, spectral range <b>800 ... 2600</b> nm, polished window, BNC connector for the RF output. Needs +5 VDC supply or bias battery.	contact us
49.	UPD-2M-IR2-P	<b>Ultrafast InGaAs PIN Photodetector</b> , rise time typ. 75 ns, bandwidth > 250 MHz, spectral range <b>900 ... 1700</b> nm, sensitive area <b>2 mm</b> diameter, polished window, BNC connector for the RF output. Needs +5 VDC supply or bias battery.	contact us



50.	UPD-2M-IR2-P-TEC	<b>Ultrafast InGaAs PIN Photodetector</b> , rise time typ. 75 ns, bandwidth > 250 MHz, spectral range <b>900 ... 2570 nm</b> , sensitive area <b>0.3 mm</b> diameter, polished window, BNC connector for the RF output. One-stage TEC cooling to -10°C. TEC driver is included. Needs +5 VDC supply or bias battery.	contact us
51.	TERM-50-BNC	External 50 Ohm terminating RF-load with a BNC connector and BNC-T-piece ( <b>recommended</b> when UPD is used in combination with any of the BBA amplifiers or oscilloscopes with 1 MOhm input impedance).	contact us
52.	TERM-50-SMA	External 50 Ohm terminating RF-load with a SMA connector and SMA-T-piece ( <b>recommended</b> when UPD is used in combination with any of the BBA amplifiers or oscilloscopes with 1 MOhm input impedance).	contact us
53.	PS-UPD-12-WW	<b>Low-Noise Power Supply for the UPD Photodetectors</b> , universal input: <b>100 ... 240 V AC</b> (worldwide), output: 12 V DC.	contact us
54.	PS-UPD-9-WW	<b>Low-Noise Power Supply for the UPD Photodetectors</b> , universal input: <b>100 ... 240 V AC</b> (worldwide), output: 9 V DC (matched to UPD-30-VSG-P photodiode).	contact us
55.	PS-UPD-5-WW	<b>Low-Noise Power Supply for the UPD Photodetectors</b> , universal input: <b>100 ... 240 V AC</b> (worldwide), output: 5 V DC (matched to UPD-15-IR2-FC, UPD-15-IR2-P, UPD-15-UVIR-FC, UPD-3N-IR2-P, UPD-2M-IR2-P and UPD-5N-IR2-P photodiode).	contact us
56.	BAT-UPD-6V	<b>Bias Battery</b> for the UPD Photodetectors, 6 V.	contact us
57.	BNC-UPD-1M	<b>BNC(m) / BNC(m) cable</b> 50 Ohm impedance, RG58, 1 m long.	contact us
58.	SMA-UPD-1M	<b>SMA(m) / SMA(m) cable</b> 50 Ohm impedance, RG174, 1 m long.	contact us
59.	SMA-BNC-AD	<b>SMA(m) / BNC(f) adapter</b> : SMA: male, BNC: female. Gold coated.	contact us
60.	UPD-FH	<b>Filter holder</b> for up-to 3 filters, each up-to 4.5 mm thickness, to be attached in front of the UPD photodiode (filters are NOT included).	contact us
<b>Avalanche Si and InGaAs Photodiodes</b>			
61.	UPD-350-SIA-SP	<b>Ultrafast Avalanche Si Photodiode</b> , rise time typ. 350 ps, bandwidth > 1 GHz, spectral range 320 ... 1100 nm, sensitive area 500 µm diameter (0.2 mm <sup>2</sup> ), quantum efficiency > 80 %, gain factor max. M=100, BNC connector for the RF output. Needs power supply PS-UPD-AV.	contact us
62.	UPD-350-SIA-UP	<b>Ultrafast Avalanche Si Photodiode</b> , UV-enhanced, rise time typ. 350 ps, bandwidth > 1 GHz, spectral range 200 ... 1100 nm, sensitive area 500 µm diameter (0.2 mm <sup>2</sup> ), quantum efficiency > 80 %, gain factor max. M=100, MgF <sub>2</sub> window, BNC connector for the RF output. Needs power supply PS-UPD-AV.	contact us
63.	UPD-350-SIA-UD	<b>Ultrafast Avalanche Si Photodiode</b> , UV-enhanced, rise time: < 350 ps, bandwidth > 1 GHz, spectral range 200 ... 1100 nm, sensitive area 500 µm diameter (0.2 mm <sup>2</sup> ), quantum efficiency > 80 %, gain factor max. M=100, quartz diffuse window, BNC connector for the RF output. Needs power supply PS-UPD-AV.	contact us



64.	UPD-250-IGA-SP	<b>Ultrafast Avalanche InGaAs Photodiode</b> , rise time: < 250 ps, bandwidth > 1.5 GHz, spectral range 800 ... 1700 nm, sensitive area 200 µm diameter (0.031 mm <sup>2</sup> ), quantum efficiency > 80 %, gain factor typ. M=20, BNC connector for the RF output. Needs power supply PS-UPD-AV.	contact us
65.	UPD-500A-TIA	<b>Ultrafast Avalanche Si Photodiode with integrated transimpedance amplifier</b> , rise time: < 500 ps, bandwidth > 1 GHz, spectral range 320 ... 1100 nm, sensitive area 500 µm diameter (0.2 mm <sup>2</sup> ), quantum efficiency > 80 %, transimpedance sensitivity: 110 kV/W, BNC connector for the RF output. Needs power supply PS-UPD-AV.	contact us
66.	PS-UPD-AV	<b>Power Supply for the avalanche Photodetectors</b> , universal input: 100 ... 240 V AC (worldwide), output matched to the avalanche photodiode.	contact us
<b>Balanced Photodetectors</b>			
67.	Option: UPD-BAL	<b>Balanced photodetector option for all listed above photodetectors. Two power supplies included.</b>	Add 20% to the doubled price of the corresponding UPD
68.	Option: UPD-BAL-TIA	<b>Amplified balanced photodetector option for all listed above photodetectors with transimpedance amplifier, 25x gain, DC to 3 GHz</b>	Add 40% to the doubled price of the corresponding UPD
69.	Option: UPD-BAL-AMP	<b>Amplified balanced photodetector option for all listed above photodetectors with broadband BBA amplifier of your choice (except BBA-100 and BBA-100-VG)</b>	Add 25% to the doubled price of the corresponding UPD
<b>Photodetector Modules, Very High Gain</b>			
70.	PDM-UVIR-720	<b>Ultrafast Photodetector Module</b> Spectral range 185 ... 720 nm, large sensitive area: 8 mm diameter, variable gain > 10 <sup>6</sup> , peak sensitivity @ 400 nm: 5.5 Megavolts/W, rise time typ. 500 ps with 50 Ohm load.	contact us
71.	PDM-UVIR-710	<b>Ultrafast Photodetector Module</b> Spectral range 230 ... 710 nm, large sensitive area: 8 mm diameter, variable gain > 10 <sup>6</sup> , peak sensitivity @ 600 nm: 6.5 Megavolts/W, rise time typ. 500 ps with 50 Ohm load.	contact us
72.	PDM-UVIR-920	<b>Ultrafast Photodetector Module</b> Spectral range 230 ... 920 nm, large sensitive area: 8 mm diameter, variable gain > 10 <sup>6</sup> , peak sensitivity @ 600 nm: 4 Megavolts/W, rise time typ. 500 ps with 50 Ohm load.	contact us
73.	PDM-UVIR-710-P	<b>Ultrafast Photodetector Module for photon counting</b> Spectral range 230 ... 710 nm, large sensitive area: 8 mm diameter, variable gain > 10 <sup>6</sup> , peak sensitivity @ 600 nm: 6.5 Megavolts/W, rise time typ. 500 ps with 50 Ohm load.	contact us



74.	PDM-UVIR-850-P	<b>Ultrafast Photodetector Module for photon counting</b> Spectral range 185 ... 850 nm, large sensitive area: 8 mm diameter, variable gain > 10 <sup>6</sup> , peak sensitivity @ 600 nm: 4 Megavolts/W, rise time typ. 500 ps with 50 Ohm load.	contact us
<b>Broadband Pulse Amplifiers: BBA Series</b>			
75.	BBA-3	<b>Broadband Inverting Amplifier,</b> bandwidth 50 kHz to 14.5 GHz, gain 10 dB (> 3x amplitude), Gain flatness: +/-5 dB for f < 4 GHz; rise time: typ. 22 ps, max. power out: +12 dBm (100 MHz), +14 dBm (5 GHz), + 11 dBm (10 GHz) Effective RMS input noise: 112 µV, maximum RF in: + 10 dBm, peak: 1 V, return loss (100 MHz) S <sub>11</sub> input: 15 dB, S <sub>22</sub> output: 18 dB, SMA-connectors, needs +12 VDC supply.	contact us
76.	BBA-20-10	<b>Broadband AC-coupled Inverting Amplifier,</b> bandwidth 100 kHz ... 10 GHz, Typical values: gain 20 dB (10x amplitude) @ 10 GHz, gain 27 dB (22x amplitude) @ 5 GHz, Noise figure: 5 dB @ 5 GHz Max. power out (IP3): +28 dBm (5 GHz), +22 dBm (10 GHz) SMA female connectors, needs +12 VDC supply.	contact us
77.	BBA-9-5	<b>Broadband AC-coupled Inverting Amplifier,</b> bandwidth 0.05 ... 5 GHz, gain 19 dB @ 4 GHz (> 9x amplitude), <b>casca</b> ble, SMA connectors, needs +5 VDC supply.	Unit Price: contact us - 1 pc contact us - 2 pcs contact us - 3 pcs
78.	BBA-10	<b>Broadband AC-coupled Inverting Amplifier,</b> bandwidth 0.01 ... 3 GHz, gain 21 dB @ 1 GHz (> 10x amplitude), SMA connectors, needs +9 VDC supply.	contact us
79.	BBA-15	<b>Broadband AC-coupled Inverting Amplifier,</b> bandwidth 0.01 ... 2 GHz, gain 24.5 dB (15x amplitude), needs +9 VDC supply.	contact us
80.	BBA-10-4HP	<b>Broadband AC-coupled Inverting Amplifier,</b> 0.01÷ 4 GHz, gain 19.4 dB (9x amplitude), SMA connectors (female), needs +9 VDC supply.	contact us
81.	BBA-100	<b>Broadband AC-coupled Non-Inverting Amplifier,</b> bandwidth 0.01 ... 2 GHz, rise time typ. 300 ps, gain 43.5 dB (> 100x amplitude), SMA connectors (female), needs +9 VDC supply.	contact us
82.	BBA-100-VG	<b>Broadband AC-coupled Non-Inverting Amplifier,</b> bandwidth 0.01 ... 2 GHz, variable gain 0 ... 43.5 dB (0 ... > 100x amplitude), SMA connectors (female), needs +15 VDC supply.	contact us
83.	TERM-50-INT	<i>Integrating</i> a 50 Ohm terminating RF-load at the input of the any of the above amplifiers ( <b>recommended</b> when used in combination with the UPD-series photodiodes).	contact us
84.	BBA-2W-P	<b>Broadband High-Power Amplifier,</b> bandwidth 50 MHz ... 1 GHz, gain 20 dB, <b>peak</b> output power: 4 W, average power: 2 W, BNC connectors, needs 24 V / 1 A supply (not included).	contact us





85.	PS-BBA-05-WW	<b>Low-Noise Power Supply for BBA Amplifiers</b> , universal input: <b>100 ... 240 V AC</b> (worldwide), output +5 VDC.	contact us
86.	PS-BBA-09-WW	<b>Low-Noise Power Supply for BBA Amplifiers</b> , universal input: <b>100 ... 240 V AC</b> (worldwide), output +9 VDC.	contact us
87.	PS-BBA-15-WW	<b>Low-Noise Power Supply for BBA-100-VG Amplifiers</b> , universal input: <b>100 ... 240 V AC</b> (worldwide), output +15 VDC.	contact us
88.	PS-BBA-12-WW	<b>Low-Noise Power Supply for BBA Amplifiers</b> , universal input: <b>100 ... 240 V AC</b> (worldwide), output +12 VDC / 1 A.	contact us
89.	PS-BBA-24-WW	<b>Low-Noise Power Supply for BBA Amplifiers</b> , universal input: <b>100 ... 240 V AC</b> (worldwide), output +24 VDC / 1 A.	contact us
		<b>Infrared-To-Visible Converters: IR-VIS Series</b>	
90.	IR-VIS-40-D	<b>Infrared-To-Visible Converter</b> , for high-power Nd:YAG lasers, special ceramics, no bleaching. Needs <b>no activation</b> with UV light, active area 2x Ø 38 mm (total 23 cm <sup>2</sup> ), sensitivity 800 ... 1100 nm and 1460 ... 1600 nm, <b>DOUBLE SIDED!</b>	contact us
		<b>Advanced Digital High-Speed High-Sensitivity CCD Line Cameras with USB 2.0 Interface CCD-S3600-D(-UV)</b>	
91.	CCD-S3600-D	<b>Advanced digital high-speed CCD line camera</b> , 3648 pixels with elongated pixel size (8x200 µm) for high sensitivity, spectral range <b>320 ... 1100 nm</b> , 16-bit ADC, large 32 MB of fast DDR2 onboard RAM, max. 269.5 fps, high-speed USB 2.0, plug & play, built-in TTL trigger input & output, USB-powered. Includes drivers, libraries & applications for LabVIEW & C++. Supports Windows 11/10/8/7/Vista/XP, Linux, Mac OS X, etc. Housing: 90 x 25 x 105 mm <sup>3</sup> (W x H x D), including USB 2.0 signal & power supply cable for interfacing to a computer.	contact us
92.	CCD-S3600-D-UV	<b>Advanced digital high-speed CCD line camera</b> , 3648 pixels with elongated pixel size (8x200 µm) for high sensitivity, UV to IR spectral range <b>200 ... 1100 nm</b> , 16-bit ADC, large 32 MB of fast DDR2 onboard RAM, max. 269.5 fps, high-speed USB 2.0, plug & play, built-in TTL trigger input & output, USB-powered. Includes drivers, libraries & applications for LabVIEW & C++. Supports Windows 11/10/8/7/Vista/XP, Linux, Mac OS X, etc. Housing: 90 x 25 x 105 mm <sup>3</sup> (W x H x D) including USB 2.0 signal & power supply cable for interfacing to a computer.	contact us
93.	CCD-S3600-D-UV-E	<b>Advanced digital high-speed CCD line camera</b> , 3648 pixels with elongated pixel size (8x200 µm) for high sensitivity, <b>UV-enhanced, NO PROTECTING WINDOW</b> , spectral range <b>170 ... 1100 nm</b> , 16-bit ADC, large 32 MB of fast DDR2 onboard RAM, max. 269.5 fps, high-speed USB 2.0, plug & play, built-in TTL trigger input & output, USB-powered. Includes drivers, libraries & applications for LabVIEW & C++. Supports Windows 11/10/8/7/Vista/XP, Linux, Mac OS X, etc. Housing: 90 x 25 x 105 mm <sup>3</sup> (W x H x D) including USB 2.0 signal & power supply cable for interfacing to a computer.	contact us



94.	CAB-TRIG-CCD-D	Trigger cable for trigger input or trigger output for CCD-3600-D(-UV), SMB connector on the CCD side, <b>BNC on the other side</b> , length 100 cm. <b>ONLY for CCD-S3600-D(-UV)!</b>	contact us
		<b>High-Sensitivity Linear CCD Arrays with Analog Output CCD-2000M(-UV)</b>	
95.	CCD-2000M	<b>CCD Array</b> , 2048 pixels, elongated pixel size 14x200 µm for high sensitivity, spectral range 320 ... 1100 nm, with analog driver, OEM.	contact us
96.	CCD-2000M-UV	<b>CCD Array</b> , 2048 pixels, UV-sensitive spectral range <b>250 ... 1100 nm</b> , elongated pixel size 14x200 µm for high sensitivity, with driver, OEM.	contact us
97.	PS-CCD-EU	<b>AC-DC Adapter for CCD-2000M(-UV) Array</b> , input: <b>220 ... 240 V AC</b> (European standard), output: +7.5 VDC, stabilized, low noise.	contact us
98.	PS-CCD-WW	<b>AC-DC Adapter for CCD-2000M(-UV) Array</b> , universal input: <b>100 ... 240 V AC</b> (worldwide), output: +7.5 VDC, stabilized, low noise.	contact us
99.	CAB-SIG-CCDM	<b>Signal Cable, connectors SMB to BNC</b> , length 100 cm. <b>For CCD-2000M(-UV) ONLY!</b>	contact us
100.	CAB-TRIG-CCDM	<b>Trigger Cable, connectors SMB to BNC</b> , length 100 cm. <b>For CCD-2000M(-UV) ONLY!</b>	contact us