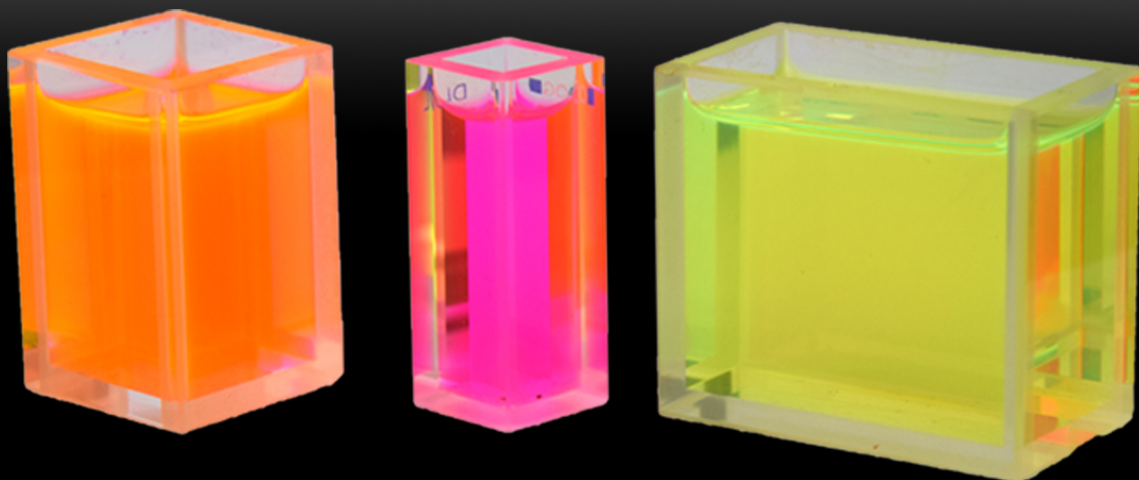


Product List 2022

**Pulsed Dye Laser
Broadband-pulsed Dye Laser
Diode Laser
Dye Circulators
Dye Cells
Filters
Raman Cells
Laser-Dyes
Excimer Laser
Modification
Optics**



Radiant Dyes Laser Acc. GmbH

NarrowScan Dye Laser



Features:

- * 1 - 500 Hz repetition rate
- * up to 1J pump energy @ 532 / 355 nm
- * Oscillator with vertical design
- * Linear scan
- * Easy and fast dye change
- * High-precision mechanical components
- * Integrated frequency doubling, tripling and mixing
- * Optical feedback option

For further information please see our "NarrowScan" brochure

Radiant Dyes Laser Acc. GmbH

NarrowScanK Compact Dye Laser



Features:

- * 1 - 100 Hz repetition rate
- * up to 1J pump energy @ 532 nm
- * Small size
- * Oscillator with vertical design
- * Easy and fast dye change
- * High-precision mechanical components

For further information please see our "NarrowScanK" brochure

Radiant Dyes Laser Acc. GmbH

Broadband-pulsed Dye Laser



RDP-1
RDP-1M
RDP-2M
RDP-3M

Features:

Broadband -dye laser with non-selective cavity.

The laser can be equipped with the following pump mirror sets:

- * Mirror set 1: 330 - 420 nm
- * Mirror set 2: 420 - 720 nm
- * Mirror set 3: 550 - 900 nm

Radiant Dyes Laser Acc. GmbH

NarrowDiode Diode Laser



Features:

- * Narrow Linewidth (down to 20 kHz)
- * High Stable Radiant Dyes Mechanics
- * 7 GHz mode-hop free tuning
- * Anti-reflection Diodes
- * Design by Observatoire de Paris
- * Only for wavelength 780 nm and 852 nm

Dye Circulators

The **features** of our dye circulators are not only their silent operation and possible 24-hour performance, but they are also easy to handle and very reliable. All systems are completely grounded.

All dye circulators can be equipped with different dye cells.



Dye circulators up to 50 Hz

RD 500 FC 20

Dye circulator RD 500 consisting of a centrifugal pump, 220 V (110 V for the U.S.), 500 ml dye reservoir, 0,2 μ m filter, stainless steel filter housing, 20 mm dye flow cell flow rate approx. 2 l/min, completely grounded.

(☒ FL 402), option: water cooling.

RD 1000 FC 40

Dye circulator RD 1000, as described above, however with 1000 ml dye reservoir, 40 mm dye flow cell, flow rate approx. 4 l/min (FL 444) option: water cooling.

The dye circulator systems RD 500 FC 20 and RD 1000 FC 40 correspond to FL 45.

Dye circulators up to 100 Hz

RD 1000 FC 20

Dye circulator RD 1000, with 20 mm dye flow cell, flow rate 4l/min, water cooling incl.

RD 2000 FC 40

Dye circulator RD 2000, with 40 mm dye flow cell, flow rate 6 l/min, water cooling incl.

Dye circulators up to 250 Hz

RD 2000 FC 20

Dye circulator RD 2000, with 20 mm dye flow cell, flow rate 7 l/min, water cooling incl.

RD 5000 FC 40

High power centrifugal pump RD 5000, 40 mm dye flow cell, flow rate 10 l/min, water cooling incl.

Dye Circulators

Dye circulators up to 5 kHz
on request!

Dye circulator with Bethune-cell

RDG 1000 FC Bethune

Geared pump, 12-V-motor, 1l dye reservoir, Bethune-cell unit, continuously adjustable DC-power supply (max.2 l/min, option: water cooling). A geared pump is necessary as the flow rate through the narrow capillary has to be adjustable.

When ordering, please mention the dye laser brand you are using!
(especially the LP SCANMATE needs different holders)

Dye circulator systems for custom-made lasers, Quanta Ray lasers and Quantel Dye lasers

RD 500

consisting of: centrifugal pump with 220-V-motor,
250 ml dye reservoir, flow rate approx. 4 l/min, 0,2 µm Filter, stainless steel filter housing,
completely grounded, option: water cooling.

RD 1000

as before, however with 1000 ml dye reservoir, flow rate 7 l/min, option: water cooling.

RD 2000

as before, however with 2000 ml dye reservoir, flow rate 15 l/min, Water cooling incl.

RD 5000

high performance centrifugal pump with 220 V motor, 5000 ml dye reservoir, flow rate 30 l/min, Water cooling incl.

Dye Circulators

Dye circulators with geared pumps

Beside our centrifugal pumps, there are applications (e.g. Bethune cells) where pressure is needed due to our narrow capillary tubes or where the flow rate has to be adjustable. Here geared pumps are indispensable. We paid attention to relatively low r.p.m. and high output of the pumps, so that the laser dyes are not influenced thermally or mechanically. Another advantage is the low noise level.

We also manufacture dye circulators according to customer specifications with a maximum flow rate of 100 l/min; a temperature stabilization is also possible.

RDG 250

Geared pump, 12 V-motor, 0 - 5 l flow rate/min,

RDG 1000/2000

as before, however with 1 l or 2l dye reservoir, option: water cooling

Continuously adjustable DC-power supply

Voltage 0-30 V; current 0-3 A (max. 5 A) with ground wiring for the RDG dye circulators

RDG 5000

380-Volt-motor, 5000 ml dye reservoir, flow rate approx. 12 l /min, max. pressure approx. 5 bar, incl. water cooling incl.



Radiant Dyes Laser Acc. GmbH

Dye Cells

Radiant Dyes is in the position to supply quartz glass cells for all dye lasers. The following cells are the most common ones for commercial and custom made dye circulator systems. Other cells made of quartz glass or other optical materials and dye flow cell units not mentioned below can be supplied according to your specifications.

Dye cells for Radiant Dyes, Lambda Physik and LAS dye laser

RDDC 20

20 mm quartz glass cell (☒ FL 462)

RDDC 40

40 mm quartz glass cell (☒ FL 464)

Dye cells for Quanta Ray dye laser

RDQR 2

Quanta Ray No. 5-0023-1, 10 x 10 x 16 mm

RDQR 4

Quanta Ray No. 5-0079, 10 x 10 x 17,5 mm,
partly unpolished

RDQR 6

Quanta Ray No. 5-0084, 21 x 17 x 50,8 mm,
partly unpolished

RDQR 3

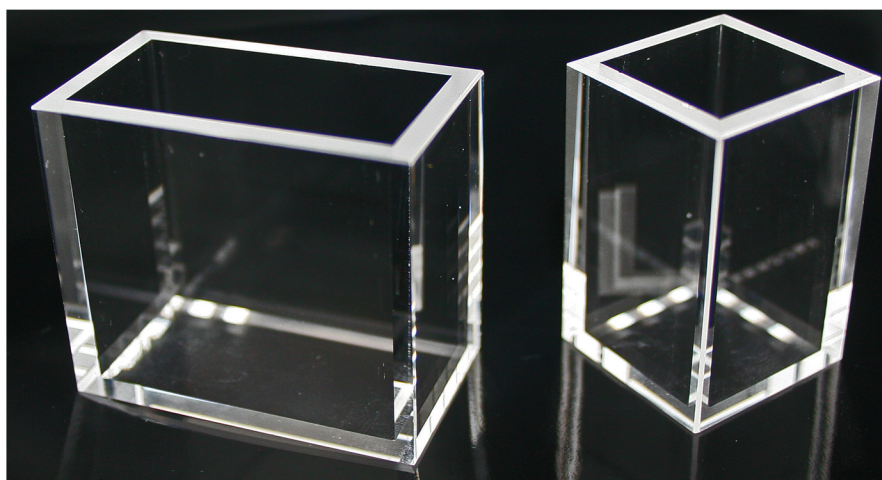
Quanta Ray No. 5-0023-2, 10 x 16 x 17,5 mm

RDQR 5

Quanta Ray No. 2-0210, 21 x 17 x 50,8 mm

RDQR 7

Quanta Ray No. 5-0078, 10 x 16 x 17,5 mm, partly
unpolished



Dye Flow Cell Units

Dye flow cell units

Our dye flow cell units for Radiant Dyes, LAS and Lambda Physik dye lasers can be used for applications up to several kHz (depending on the pump energy of the pump laser and the flow rate of the dye circulator). It is also possible to use these units in custom made systems. We also offer parts for mounting and adjustment of the dye flow cell units for custom-made systems

RDFC 20

20 mm dye flow cell unit

Mounted and adjusted dye flow cell unit consisting of flow body, frame and 20 mm quartz glass cell, for repetition rates up to 500 Hz, replaces RDVC 20

RDFC 40

40 mm dye flow cell unit

Mounted and adjusted dye flow cell unit consisting of flow body, frame and 40 mm quartz glass cell, for repetition rates up to 500 Hz, replaces RDVC 40

Modification of dye flow cell units With flow units made of chromium plated brass on new plastic cell units.



Radiant Dyes Laser Acc. GmbH

Amplifier Dye Cells



Amplifier dye cells with holder

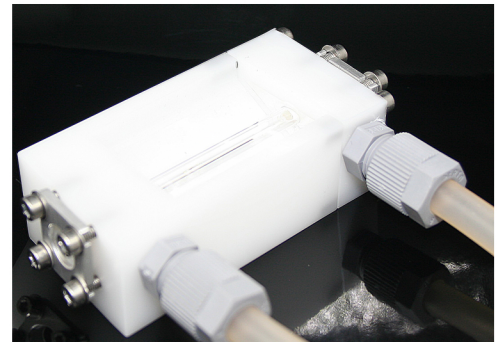
For improving the beam quality of the dye lasers we offer Bethune amplifier cells. These cells have a circular capillary tube through which the laser dye flows. The Bethune cell can be used for Excimer- and Nd:YAG pump lasers. The bore diameter of the 30 mm long capillary can vary between 3 and 6 mm, depending on the energy of the pump laser.

RDB Bethune-dye cell incl. holder

Fits into the Lambda Physik, LAS and Radiant Dyes main amplifier cell holder.

RDBZ BETHUNE

Bethune-cell with various bore diameters (3; 4 or 6 mm)



Quartz glass cells for custom made dye laser systems

RD 5

5 mm cell (int. 5 x 10 mm, 45 mm high)

RD 10

10 mm cell (int. 10 x 10 mm, 45 mm high)

RDC 4

4 mm dye flow cell made of quartz glass

RDC 10

10 mm dye flow cell made of quartz glass

Radiant Dyes Laser Acc. GmbH

Dye Filters

Dye filters for dye circulator systems

Our high quality filter cartridges are one-way filters made of sintered polypropylene with high retention rates of 0,2 μm .

On request, filters of other materials such as teflon or different can be supplied.



Filters for Radiant Dyes and LAS dye circulator systems:

RDF 2
for RD 250 FC 20; RD 1000 FC 40



RDF 10
for RD 1000 FC 20; RD 2000 FC 40



RDF 25 for RDG 250



RDF 11
retention rate approx. 5 μm
for RD(N)2000 CW



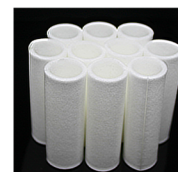
RDF 12
for RD/RDG 5000

Filters for Lambda Physik dye circulators:

RDF 44
for FL 442-445 (☒ FL 415)

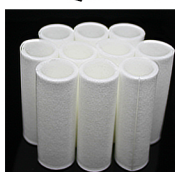


RDF 46
for FL 402-406 (☒ FL 414)



Filters for Quanta Ray TSC 2 and for Quantel DCP-02:

RDF 60
retention rate approx. 5 μm



Filters for Spectra Physics and Coherent:

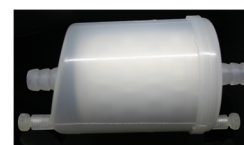
RDF 50 Dye Filter



Filters for custom made systems

RDF 70
filter capsule, to be installed into existing tube systems according to customer specifications

RDF 71
tube connections for RDF 70 (6 mm/8 mm/10 mm/12 mm)



Raman Cells

Raman shifters are suitable for a frequency conversion of fixed or tuneable laser sources and for the suppression of amplified spontaneous emission (ASE) and are based on stimulated Raman-scattering (SRS). The most commonly used gases for this purpose are H₂, D₂, O₂ and N₂. SRS is a flexible, economic and easy to handle wavelength extension method.

In addition, tuneable radiation down to 150 nm can be generated if the pump (dye laser) radiation provides sufficient high energy (= 30 mJ) and good focusability. Starting in the visible or ultraviolet with tuneable dye laser radiation, the complete spectral interval down to 150 nm is accessible without gaps by using different dyes.

The conversion efficiencies are more than 20% for the first Stokes and around 5% for the first anti-Stokes component. The efficiencies for higher order anti-Stokes components scale approximately with:

$$AS_{n+1} \sim AS_n \times 0.3 \text{ for } n > 1$$

Continuous tuneable radiation from 190 nm (anti-Stokes generation) up to the far infrared region (Stokes generation) can be generated by using one Raman cell and one non-linear medium (e.g. H₂).

Vacuum-flanges to connect the Raman cell to a vacuum vessel can be ordered from Radiant Dyes.

RD-RS RAMAN-Shifter Construction kit

The Set contains:

Cylindrical stainless steel gas pressure cell (approx. 1.20 m) with end flanges.

A positive quartz lens is used as entrance window, a quartz plate as output window.

The set contains also: A quartz collimating lens, one input (gas-in) and one output (to vacuum pump) valve, one pressure gauge (0 - 40 bar), one adjustable pressure relief valve adjusted to max. 40 bar and mounting equipment to fasten the cell upon an optical table.

All components are made of stainless steel.

All connections are standard Swagelok parts.

The Raman-cells are pressure tested by Radiant Dyes.

This and the automatic pressure relief valve minimises potential hazards.



**The RAMAN-Cell must be installed in an explosion proofed housing.
We take on no responsibility for accidents because of improper use.**

Radiant Dyes Laser Acc. GmbH

Laser Dyes

Since 1982 we synthesise laser dyes in excellent quality. The extensive quality management of our experienced chemists ensures a constant quality on a high level.

Our offer consists of a broad range of laser dyes to cover all desired wavelengths. All special data are listed in the table of our dye poster, already mentioning the pump laser which is used. We offer solvents in laser quality, which are the optimum solvents for Coumarine, Rhodamine and Cyanine dyes because of their high polarity. The high viscosity of Ethylene glycol shows to be an advantage for the use of cw-dye lasers.

Ready-to-use dye solutions

As a special service we offer ready-to-use dye solutions, which are made individual on customer request.

But please note: we recommend to buy dye and solvent separately, because dyes have a better durability as a dry powder than a solution.

Important advice:

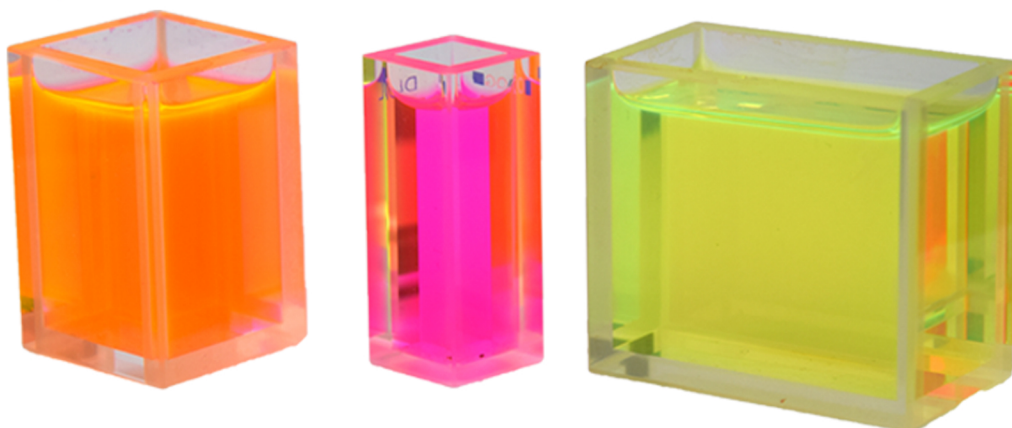
Take care, that your dye solution contains no solid particles before use. Often an ultrasonic bath helps to solve the dye.

At a change of dye to another wavelength the dye circulator must be flushed with clean solvent. Otherwise the efficiency can be reduced or destroyed by dye rests.

Please notice:

Handle all dyes and solvents with care! A lot of dyes (also as solution!) are known as hazardous or irritating. The solvents can carry the dyes through the skin into your body (e.g. Benzyl alcohol, DMSO, Dioxan, Methanol) Always wear rubber gloves, protecting masks, goggles and clothes when weighing and solving the dyes. In case of skin contact wash with plenty of water!

Please, make yourself clear, which solvents are combustibile and take care to avoid any danger!



Radiant Dyes Laser Acc. GmbH

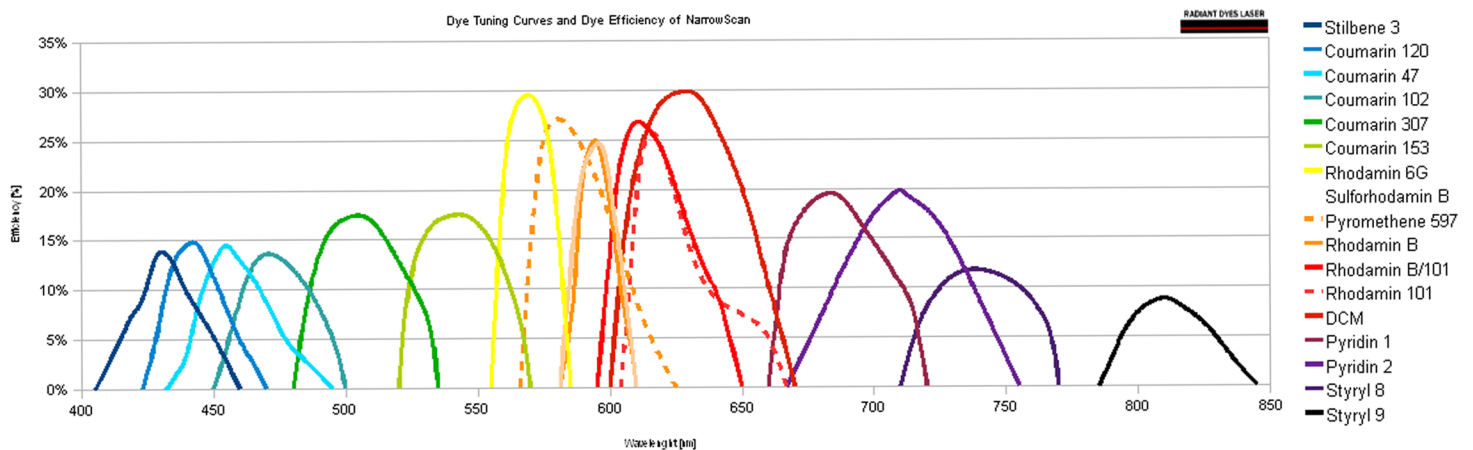
Laser Dyes

Art. No.	Dye name	Art.No.	Dye name
001	BM-Terphenyl (BMT)	048	Coumarin 102 (C 480)
002	PTP (P-Terphenyl)	049	Coumarin 106
003	TMQ	050	Coumarin 120 (C 440)
004	Butyl-PBD (BPBD)	051	Coumarin 151 (C 490)
005	PBD	052	Coumarin 152 (C 485)
006	PPO	053	Coumarin 152A (C 481)
007	PPF	054	Coumarin 153 (C 540A)
008	Exalite 351	055	Coumarin 307 (C 503)
009	Exalite 376	056	Coumarin 311
010	Exalite 377E	057	Coumarin 314 (C 504)
011	Exalite 384	058	Coumarin 334 (C 521)
012	Exalite 389	059	Coumarin 337 (C 523)
013	Exalite 392A	060	Coumarin 343
014	Exalite 392E	061	Coumarin 445
015	Exalite 398	062	Coumarin 466 (LD 466)
016	Exalite 400E	063	LD 473
017	Exalite 404	064	Coumarin 487
018	Exalite 411	065	LD 489
019	Exalite 416	066	Coumarin 498
020	Exalite 417	067	Coumarin 500
021	Exalite 428	068	Coumarin 510
022	RDC 360 Neu	069	Coumarin 545
023	Polyphenyl 2	070	Pyrromethene 546
024	BMQ	071	Pyrromethene 556
025	DMQ	072	Pyrromethene 567
026	TMI	073	Pyrromethene 580
027	QUI	074	Pyrromethene 597
028	BiBuQ (BBQ)	075	Pyrromethene 650
029	Quinolon 390 (LD 390)	076	DOCI
030	a-NPO	077	Uranin
031	PBBO	078	Fluorescein 27 (Fluor. 548)
032	DPS	079	Rhodamin 6G (Rh. 590)
033	BBO	080	Rhodamin 6G Tetrafluorab.
034	Stilben 1	081	Rhodamin 6G Perchlorat
035	Stilben 3 (Stilben 420)	082	Fluorol 7GA (Fluor. 555)
036	LD 423	083	Rhodamin 19 (Rh. 575)
037	Carbostyryl 3 (LD 425)	084	Rhodamin 101 (Rh. 640)
038	POPOP	085	Sulforhodamin 101
039	Umbelliferon 7	086	Rhodamin 110 (Rh. 560)
040	Umbelliferon 47 (C 4)	087	Rhodamin B (Rh. 610)
041	Bis-MSB	088	Rhodamin B Perchlorat
042	Coumarin 2 (C 450)	089	Sulforhodamin B (Kiton Red)
043	Coumarin 6 (C 540)	090	Malachitgrün
044	Coumarin 6H (LD 490)	091	DCM
045	Coumarin 7 (C 535)	092	DCM-Spezial
046	Coumarin 30 (C 515)	093	DODC-Jodid (DODCI)
047	Coumarin 47	094	LD 688

Radiant Dyes Laser Acc. GmbH

Laser Dyes

Art.No.	Dye name	Art.No.	Dye name
095	Kresylviolett	125	DQOCI
096	Pyridin 1 (LDS 698)	126	DDC-Jodid 4
097	Pyridin 2 (LDS 722)	127	Phenoxazon 9 (Phenox.660)
098	Nilblau Perchlorat	128	Sättigbarer Absorber 580
099	Oxazin 4 (LD 690 Perchl)	129	DTTC Jodid
100	DCI-2	130	IR 26
101	DTCI	131	IR 125
102	DQTCI	132	IR 140
103	Rhodamin 700 (LD 700)	133	IR 143
104	Oxazin 1 Perch. (Ox 725)	134	IR 144
105	Oxazin 170 (Ox 720)	135	9-Methylantracen
106	Oxazin 750	136	DASPI
107	Styryl 6 (LDS 730)	137	PICI
108	Styryl 7 (LDS 750)	138	DMETCI
109	Styryl 8 (LDS 751)	139	DASBTI
110	LDS 765	140	HICI
111	Styryl 11 (LDS 798)	141	Pinacyanol
112	Styryl 9 (LDS 821)	142	DDBCI
113	Styryl 9M	143	Kryptocyanin
114	LDS 867	144	DTDC Jodid
115	Styryl 13 (LDS 925)	145	NCI
116	Rhodamin 800 (LD 800)	146	DDI
117	Hexacyanin 2 (HIDC Jodid)	147	DTP
118	DOTC Jodid	148	HDITCP
119	DOTC Perchlorat	149	DNTTCI
120	HITC Perchlorat	150	DQTrCI
121	Hexacyanin 3 (HITC Jodid)	151	Q-Switch I
122	Methyl-DOTCI (DMOTCI)	152	Q-Switch 5
123	Hexadibenzocyanin 3	153	BBOT
124	Dibenzocyanin 45 (DDTTC)		



Radiant Dyes Laser Acc. GmbH

Accessories for Excimer Laser

Spare parts for Excimer

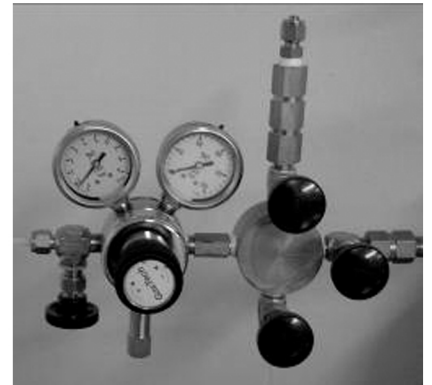
Stainless Steel Gas Regulator with purging equipment

For corrosive F₂- and HCl- gasmixtures

Body: Stainless steel 1.4401

Seal: Viton/PVDF/Teflon

Safety valve: installed



Stainless Steel Gas Regulator

As above, however without purging equipment

Gas Regulator

Brass, chromium-plated, for purified gases

Vacuum pump

Air cooled vacuum pump with check valve, oil mist precipitator, input sieve filter, tube connection on the exhaust side.

Displacement: 6 m³/h

Base pressure: 2 mbar

Power required: 380 V / 50 Hz, 3 phases

Excimer laser-Thyratron



Magnetic clutch



(When ordering, please inform us about the type of Laser you are using and construction year)

mirror mounts

for 36mm and 38mm (1.5"). Ready-to-use solution



Radiant Dyes Laser Acc. GmbH

Modification and Overhaul of existing Lasers and Accessories

Modification and Overhaul of all commercial available dye lasers, cw- and pulsed

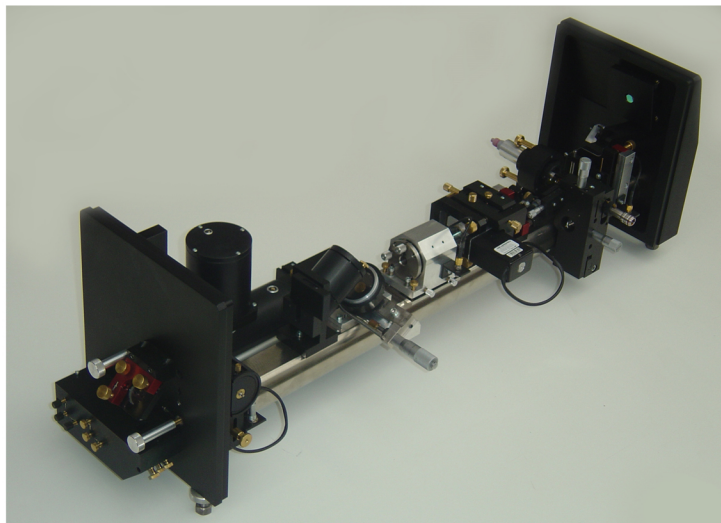
for example:

- * Basic adjustment
- * Modification to improved bandwidth
- * Installation of new gratings
- * Improvement of the original mechanic components
- * Modification for different pump optics

Modification and Overhaul of old Lasersystems and Laser Accessoires:

- * Coherent and Spectra Physics dye lasers
- * Coherent Dye circulators
- * Coherent pump Geared pump
- * Spectra Physics pump
- * Dye flow cell units
- * Lambda Physik FL 45 Dye-Selectors

On request we can offer you a qualified and cost-effective training on all existing dye laser (cw and pulsed)



Radiant Dyes Laser Acc. GmbH

Optics

For Dye Laser

For our Dye Laser we offer only our standard optics which are included in the laser.

- * Pump optics for all existing dye lasers
Pump optic-set: 308 nm, 355 nm or 532 nm

CW-Dye-Laser

- * Optic-Set for self-made dye ring laser and Coherent 699
-> Optic-Set VIS , P1, M1, M4, M5 & Tweeter
- * Optic-Set for self-made dye ring laser and Coherent 699
-> Optic-Set BLUE (without Tweeter), P1, M1, M4, M5 & Tweeter
- * Optic-Set for self-made TiSa laser and Coherent 899
-> Optic-Set TiSa (without Tweeter), P1, P2, P3, M1, M4, M5 & Tweeter

Excimer-Laser

- * (0° and 45°) and -windows:

Material: MgF₂ or CaF₂

Diameter, thickness : 36mm or 38mm (1,5"), d= 5mm

Mirrorcoating: Al or dielectric @ 193, 248, 308 nm



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