

LUMC Light Microscopy Facility

Technique	Name	Location	Inverted	Automatic stage 37°C/CO ₂	Application	Glass slides	Chamber slide	Multiwell plate*	Responsible
Widefield	Leica AF6000	S-01-017	✓	✓	Live-cell	✓	✓	✓	Annelies, Karien
	Leica DM6B 1	S-01-017	✗	✗	Fixed	✓	✗	✗	Annelies, Karien
	Leica DM6B 2	S-01-017	✗	✗	Fixed	✓	✗	✗	Annelies, Karien
	Zeiss Axio Imager M2	R-90-029	✗	✗	Fixed	✓	✗	✗	Annelies, Karien, Bert
	Thermo CellOmics	R-04-008	✓	✗	High-content	✗	✗	✓	Tom
Scanning confocal	Leica SP8 upright	S-01-017	✗	✗	Fixed	✓	✗	✗	Annelies, Karien
	Zeiss LSM900 Airyscan 2	S-01-017	✗	✗	Fixed, Airyscan SR	✓	✗	✗	Annelies, Karien, Bert
	Zeiss LSM980 Airyscan 2 NIR	S-01-017	✓	✓	Live-cell/fixed, Airyscan SR, NIR, FRAP	✓	✓	✓	Annelies, Karien, Bert
	Leica SP8 WLL 1	S-01-017	✓	✓	Live-cell/fixed	✓	✓	✓	Annelies, Karien
	Leica SP8 WLL 2	S-01-017	✓	✓	Live-cell/fixed	✓	✓	✓	Annelies, Karien
Spinning disc confocal	Andor DragonFly 500	S-01-017	✓	✓	Live-cell, large field-of-view, FRAP, TIRF	✓	✓	✓	Annelies, Karien
	Andor DragonFly 200	S-01-017	✓	✓	Live-cell, large field-of-view	✓	✓	✓	Annelies, Karien
	ImageXpress Micro Confocal	S-01-042	✓	✓	High-content	✗	✓	✓	Rudmer
	Thermo CellInsight CX7 LZR	R-04-008	✓	✗	High-content	✗	✗	✓	Tom
Slidescanner	3DHISTECH Slidescanner service	P-01-047	✗	✗	Brightfield slidescanner	✓	✗	✗	Tessa, Ruud
	Zeiss Axio Scan.Z1	S-01-042	✗	✗	Brightfield/fluorescence slidescanner	✓	✗	✗	Annelies, Karien, Bert
Lightsheet	Miltenyi UltraMicroscope Blaze	S-01-042	✗	✗	Fast 3D imaging of (cleared) samples	Cleared tissue			Bert
Other	IncuCyte S3	R-02-011	✓	✓	Long term live-cell	Cell culture plates			Maarten
	Leica M65 Stereo	S-01-017	✗	✗	Macro-samples	N/A			Annelies, Karien
Data analysis	Work station 1 Work station 2 Work station 3	S-01-042 S-01-042 S-01-042				Imaris, Huygens, Caseviewer, Zeiss ZEN Lite, R Leica Las X, Caseviewer, Aperio ImageScope, CellProfiler, ilastik, Matlab, Rstudio Zeiss ZEN Desk, QuPath, Imaris Viewer, CellProfiler, Cytoscape, ilastik, Caseviewer, Leica Las X, R			

*preferably phenoplate/μClear or glass-bottom

Technique	Scanning confocal	Spinning disc confocal	TIRF	NIR	Airyscan SR
Applications	3D z-stacks; Multi-channel fluorescence; Tile scan	Faster than scanning confocal; Live-cell imaging with reduced phototoxicity; Large field of view or z-stacks	Enhanced signal-to-noise for specimen about 200 nanometer close to the coverslip; Membrane dynamics;	Near-infrared imaging; Additional channels for multiplexing	Super-resolution microscopy; ~1.7x increased resolution w.r.t. confocal; Improved signal-to-noise ratio
Example samples	2D cell culture; Tissue sections; Fixed immunostained samples; Live cells expressing	Live cell dynamics; Organoids; Fast biological processes; 3D cell cultures	Membrane proteins; Cell adhesion studies; Single-molecule tracking	Multiplexed immunofluorescence	Subcellular structures; Cytoskeleton; Nuclear organization; Synapses; Organelle
Technique	FRAP	Slidescanner	Lightsheet	Widefield fluorescence	High-content imaging
Applications	Fluorescence Recovery After Photobleaching; Analysis of protein dynamics in living cells	Automated imaging of slides (tissue sections); Large area scanning	Rapid 3D imaging; Imaging of large fixed samples	Fast imaging but with lower resolution than confocal	Automated imaging of multiwell plates; Large-scale screens; Quantitative analysis
Example samples	Nuclear proteins; Membrane dynamics; Protein mobility in cellular compartments; DNA	Histological sections; Whole slide imaging; Clinical pathology samples	Cleared tissue samples; Embryos; Organoids; Whole small organisms	Fixed cells; FISH; Immunofluorescence; Live cell imaging with strong signals	Drug screens; siRNA screens; CRISPR screens; Cell migration assays; Cell

Fluorescence Filter Cubes

Leica DM6B 1

#	Name	Cube	Excitation filter	Emission filter
0	DIC	POL	DIC	DIC
1	Dapi	A4	BP 340-380	BP 450-490
2	DEAC	D	BP 431-441	BP 473-498
3	TRITC	N2.1	BP 532-554	BP 573-613
4	Texas Red	TXR	BP 540-580	BP 593-668
5	FITC	L5	BP 460-500	BP 512-542
6	Cy5	Y5	BP 590-650	BP 662-737
7	Cy7	Y7	BP 672-747	BP 765-855

Leica DM6B 2

#	Name	Cube	Excitation filter	Emission filter
0	Dapi	A4 (ATL)	BP 340-380	BP 450-490
1	DEAC	D	BP 431-441	BP 473-498
2	FITC	L5	BP 460-500	BP 512-542
3	TRITC	546	BP 532-554	BP 573-613
4	Texas Red	TXR	BP 542-582	BP 604-664
5	Cy5	Y5	BP 590-650	BP 662-737
6	Cy7	Y7	BP 672-747	BP 765-855
7	Blue/Green/Red	B/G/R	BP 405-435 BP 487-502 BP 560-580	BP 455-475 BP 515-545 BP 620-660

IncuCyte S3

Excitation filter	Emission filter
BP 513-568 BP 648-674	BP 577-641 BP 684-771

Andor DragonFly 500

Emission filter
BP 450/50
BP 480/40
BP 525/50
BP 540/30
BP 620/60
BP 700/75
BP 724/40
BP 470/25 BP 535/30

Andor DragonFly 200

Emission filter
BP 445/46
BP 521/38
BP 594/43
BP 698/77
BP 522/45 LP 573
BP 445/58 BP 521/47 BP 594/42 BP 698/94
Polarizer

Miltenyi UltraMicroscope Blaze

Emission filters
BP 525/50
BP 620/60
BP 680/30
LP 805

Leica AF6000

#	Name	Cube	Excitation filter	Emission filter
0	Analysator	ANA	DIC	DIC
1	Dapi	A4	BP 340-380	BP 450-490
2	FITC	GFP	BP 460-488	BP 502-547
3	RFP	RFP	BP 545-551	BP 570-640
4	Texas Red	TXR	BP 542-582	BP 604-664
5	Cy5	Y5	BP 590-650	BP 662-737

Zeiss Axio Imager M2

#	Name	Cube	Excitation filter	Emission filter
0			DIC/POL/BF	
1	DAPI	49	SP 365	BP 445/50
2	GFP	38 HE	BP 470/40	BP 525/50
		31	BP 565/30	BP 620/60
4	mCherry	64 HE	BP 587/25	BP 647/70
5	Cy5	50	BP 640/30	BP 690/50
6	Cy7	115	BP 710/87	BP 814/91

Zeiss Axio Scan.Z1

#	Name	Cube	Excitation filter	Emission filter
0	QUAD	90 HE LED		BP 425/30 BP 514/30 BP 592/30 BP 709/100
1	DAPI	49	SP 365	BP 445/50
2	CFP	47 HE	BP 436/25	BP 480/40
3	GFP	38 HE	BP 470/40	BP 525/50
4	Cy3	43 HE	BP 550/25	BP 605/70
5	mCherry	64 HE	BP 587/25	BP 647/70
6	Cy5	50	BP 640/30	BP 690/50
7	Cy7		BP 710/75	LP 760

ImageXpress Micro Confocal

Name	Excitation filter	Emission filter
DAPI	BP 381-392	BP 417-477
FITC	BP 465-500	BP 516-556
TRITC/Cy3	BP 532-554	BP 573-613
Texas Red	BP 542-582	BP 604-644
Cy5	BP 608-648	BP 672-712

Confocal

Leica SP8 upright (S1-17)

405

488

552

638

Leica SP8 WLL 1 inverted (S1-17)

405

561

WLL
470-670 nm

Leica SP8 WLL 2 inverted (S1-17)

405

561

633

WLL
470-670 nm

Zeiss LSM900 upright (S1-17)

405

488

561

640

Zeiss LSM980 inverted (S1-17)

405

445

488

514

561

594

639

730

Lightsheet

Miltenyi UM Blaze lightsheet (S1-42)

488

561

640

785

Spinning Disk Confocals

Dragonfly 200 inverted (S1-17)

405

488

561

637

Dragonfly 500 inverted (S1-17)

405

445

488

514

561

637

685

CellInsight CX7 HCS

405

450

488

561

594

647

785

ImageXpress Micro HCS (D3-35)

390

475

542

560

635

LED

3DHISTECH P250 slidescanner (S1-42)

386

438

475

512

550

650

LED

Zeiss Axio Scan.Z1 slidescanner (S1-42)

385

430

475

555

590

630

735

LED

Slidescanners

Objective Lenses

Leica SP8 upright (S1-17)

10	HC PL FL 10x/0.30
40	HC PL APO 40x/1.30 OIL CS2
63	HC PL APO 63x/1.40 OIL CS2
100	PL FL 100x/1.30 OIL

Leica SP8 WLL 1 inverted (S1-17)

10	HC PL APO 10x/0.40 CS
40	HC PL FL L 40x/0.60 CORR
25	HC PL FL 25x/0.75 OIL CS2
40	HC PL APO 40x/1.30 OIL CS2
63	HC PL APO 63x/1.40 OIL CS2
63	PL APO 63x W/1.20 W CORR

Leica SP8 WLL 2 inverted (S1-17)

5	HCX PL FL 5x/0.15
10	HC PL APO 10x/0.40 CS2
20	HC PL APO 20x/0.75 CS2
40	HC PL APO 40x/1.30 OIL CS2
63	HC PL APO 63x/1.40 OIL CS2
100	HCX PL APO 100x/1.40 OIL STED 2

Zeiss LSM900 Airyscan 2 upright (S1-17)

2.5	EC Plan-Neo Fluor 2.5x/0.075 FWD: 9.5 mm
10	Plan-Apochromat 10x/0.45 FWD: 2.1 mm
20	Plan-Apochromat 20x/0.80 FWD: 0.55 mm
40	Plan-Apochromat 40x/1.30 Oil FWD: 0.20 mm
63	Plan-Apochromat 63x/1.40 Oil DIC FWD: 0.19 mm
10	C Epiplan-Apochromat 10x/0.40 DIC FWD: 5.4 mm
100	LD C Epiplan-Neofluar 100x/0.75 DIC FWD: 4.0 mm

cryo

Zeiss LSM980 Airyscan 2 inverted (S1-17)

5	EC Plan-Neofluar 5x/0.16 FWD: 18.5 mm
20	Plan-Apochromat 20x/0.80 FWD: 0.55 mm
25	LD LCI Plan-Apochromat 25x/0.8 IMM FWD: 0.57 mm
40	C-Apochromat 40x/1.2 W corr FWD: 0.28 mm

Leica AF6000 inverted (S1-17)

10	HC PL FL 10x/0.30
20	HC PL FL 20x/0.50
40	HC PL FL L 40x/0.60 CORR
63	PL FL L 63x/0.7 CORR
63	HCX PL APO 63x/1.30 GLYC (ne=1.4601) CORR 37°C
100	HCX PL APO 100x/1.40-0.70 OIL
1.25	HC PL FL 1.25x/0.04

Leica DM6B 1 upright (S1-17)

4	C PLAN 4x/0.10
10	HC PL FL 10x/0.30
40	HC PL APO 40x/0.85 CORR
20	HC PL APO 20x/0.70 IMM CORR CS
40	HCX PL APO 40x/1.30 OIL
63	HC PL APO 63x/1.40-0.60 OIL
100	HCX PL FL 100x/1.30 OIL

Leica DM6B 2 upright (S1-17)

5	HCX PL FL 5x/0.15
10	HC PL APO 10x/0.30
20	HC PL APO 20x/0.70 CS
40	HC PL APO 40x/0.70
16	PL FL 16x/0.50 IMM
40	HCX PL APO 40x/1.25-0.75 OIL
63	HCX PL APO 63x/1.40 OIL PH3 CS

Zeiss Axio Imager M2 upright (R-90-029)

10	EC Plan-Neofluar 10x/0.3 Ph1 FWD: 5.2 mm
40	Plan-Apochromat 40x/1.4 Oil FWD: 0.13 mm
50	LD EC Epiplan-Neofluar 50x/0.55 DIC FWD: 9.1 mm
100	LD EC Epiplan-Neofluar 100x/0.75 DIC FWD: 4 mm

Dragonfly 200 inverted (S1-17)

10	HC PL FL 10x/0.30
40	HCX PL APO 40x/1.30 OIL CS
63	HCX PL APO 63x/1.40-0.60 OIL CS
10	HC APO L 10x/0.30 W U-V-I
20	HC APO L 20x/0.50 W U-V-I
40	HC APO L 40x/0.80 W U-V-I

Dragonfly 500 inverted (S1-17)

10	HC PL APO 10x/0.40
20	HC PL APO 20x/0.75 IMM CORR CS2
40	HCX PL APO 40x/1.30 OIL
63	HCX PL APO 63x/1.40-0.60 OIL
100	HC PL APO 100x/1.47 OIL CORR TIRF

Leica SP8 upright

(S1-17)

Objective Lenses

10	HC PL FL 10x/0.30
40	HC PL APO 40x/1.30 OIL CS2
63	HC PL APO 63x/1.40 OIL CS2
100	PL FL 100x/1.30 OIL

Confocal laser lines

405

488

552

638

Leica SP8 WLL 2 inverted

(S1-17)

Objective Lenses

5	HCX PL FL 5x/0.15
10	HC PL APO 10x/0.40 CS2
20	HC PL APO 20x/0.75 CS2
40	HC PL APO 40x/1.30 OIL CS2
63	HC PL APO 63x/1.40 OIL CS2
100	HCX PL APO 100x/1.40 OIL STED 2

Confocal laser lines

	405
	561
	633
	WLL 470-670 nm

Leica SP8 WLL 1 inverted

(S1-17)

Objective Lenses

10	HC PL APO 10x/0.40 CS
40	HC PL FL L 40x/0.60 CORR
25	HC PL FL 25x/0.75 OIL
40	HC PL APO 40x/1.30 OIL CS2
63	HC PL APO 63x/1.40 OIL CS2
63	PL APO 63X/1.20 W CORR

Confocal laser lines

	405
	561
	WLL 470-670 nm

Zeiss LSM900 Airyscan 2 upright

(S1-17)

Objective Lenses

2.5	EC Plan-Neo Fluor 2.5x/0.075 FWD: 9.5 mm
10	Plan-Apochromat 10x/0.45 FWD: 2.1 mm
20	Plan-Apochromat 20x/0.80 FWD: 0.55 mm
40	Plan-Apochromat 40x/1.30 Oil FWD: 0.20 mm
63	Plan-Apochromat 63x/1.40 Oil DIC FWD: 0.19 mm

Confocal laser lines

	405
	488
	561
	640

Cryo Objective Lenses

10	C Epiplan-Apochromat 10x/0.40 DIC FWD: 5.4 mm
100	LD C Epiplan-Neofluar 100x/0.75 DIC FWD: 4.0 mm

Zeiss LSM980 Airyscan 2 inverted

(S1-17)

Objective Lenses

5	EC Plan-Neofluar 5x/0.16 FWD: 18.5 mm
20	Plan-Apochromat 20x/0.80 FWD: 0.55 mm
25	LD LCI Plan-Apochromat 25x/0.8 IMM FWD: 0.57 mm
40	C-Apochromat 40x/1.2 W corr FWD: 0.28 mm

Confocal laser lines

	405
	445
	488
	514
	561
	594
	639
	730

Andor DragonFly 200 inverted

(S1-17)

Objective Lenses

10	HC PL FL 10x/0.30
40	HCX PL APO 40x/1.30 OIL CS
63	HCX PL APO 63x/1.40-0.60 OIL CS
10	HC APO L 10x/0.30 W U-V-I
20	HC APO L 20x/0.50 W U-V-I
40	HC APO L 40x/0.80 W U-V-I

Laser lines

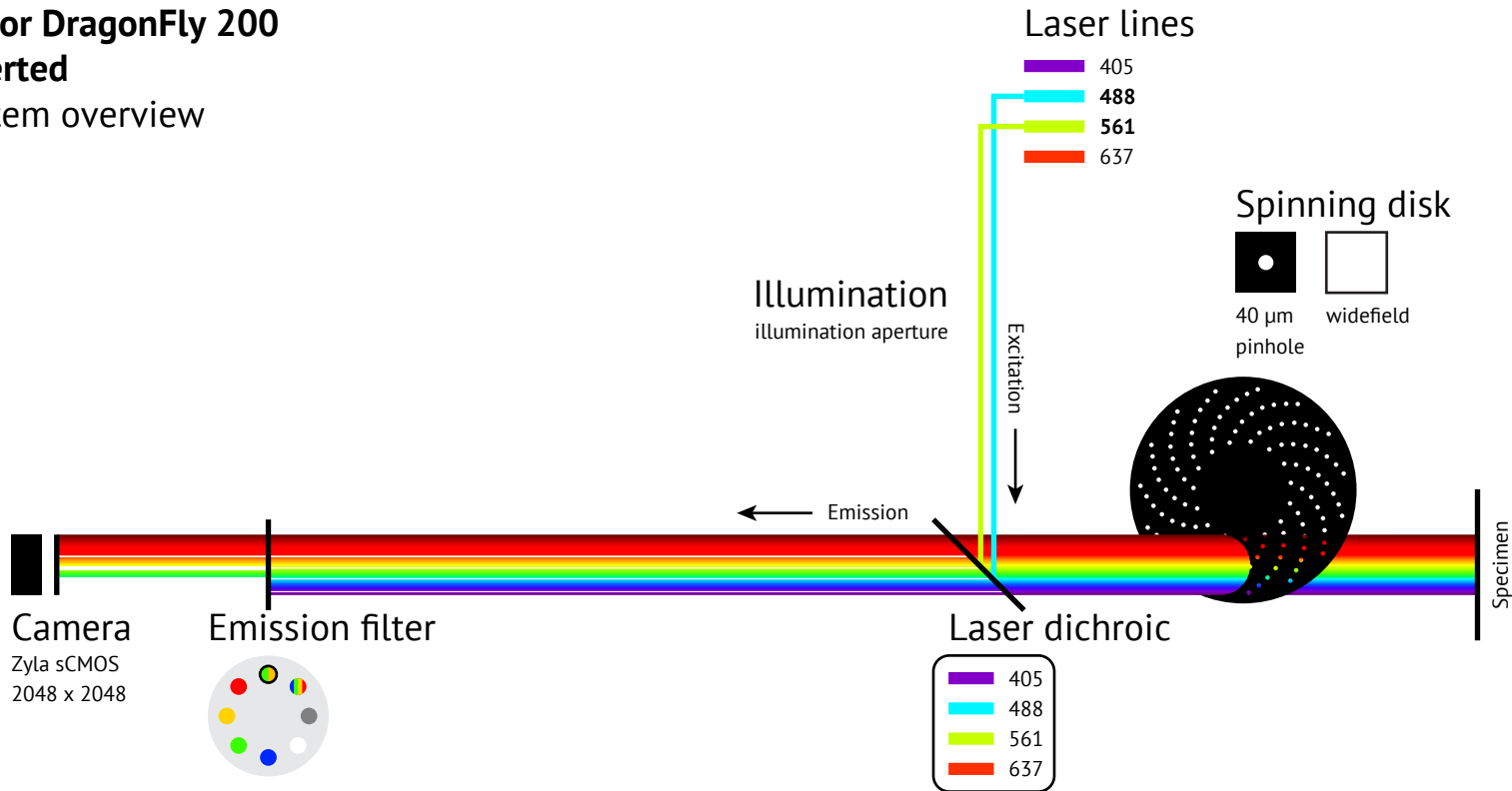
	405
	488
	561
	637

Emission filters

BP 445/46
BP 521/38
BP 594/43
BP 698/77
BP 522/45 LP 573
BP 445/58 BP 521/47 BP 594/42 BP 698/94
Polarizer

Andor DragonFly 200 inverted

System overview



Andor DragonFly 500 inverted

(S1-17)

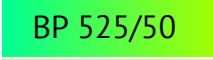
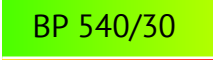
Objective Lenses

10	HC PL APO 10x/0.40
20	HC PL APO 20x/0.75 IMM CORR CS2
40	HCX PL APO 40x/1.30 OIL
63	HC PL APO 63x/1.40-0.60 OIL
100	HC PL APO 100x/1.47 OIL CORR TIRF

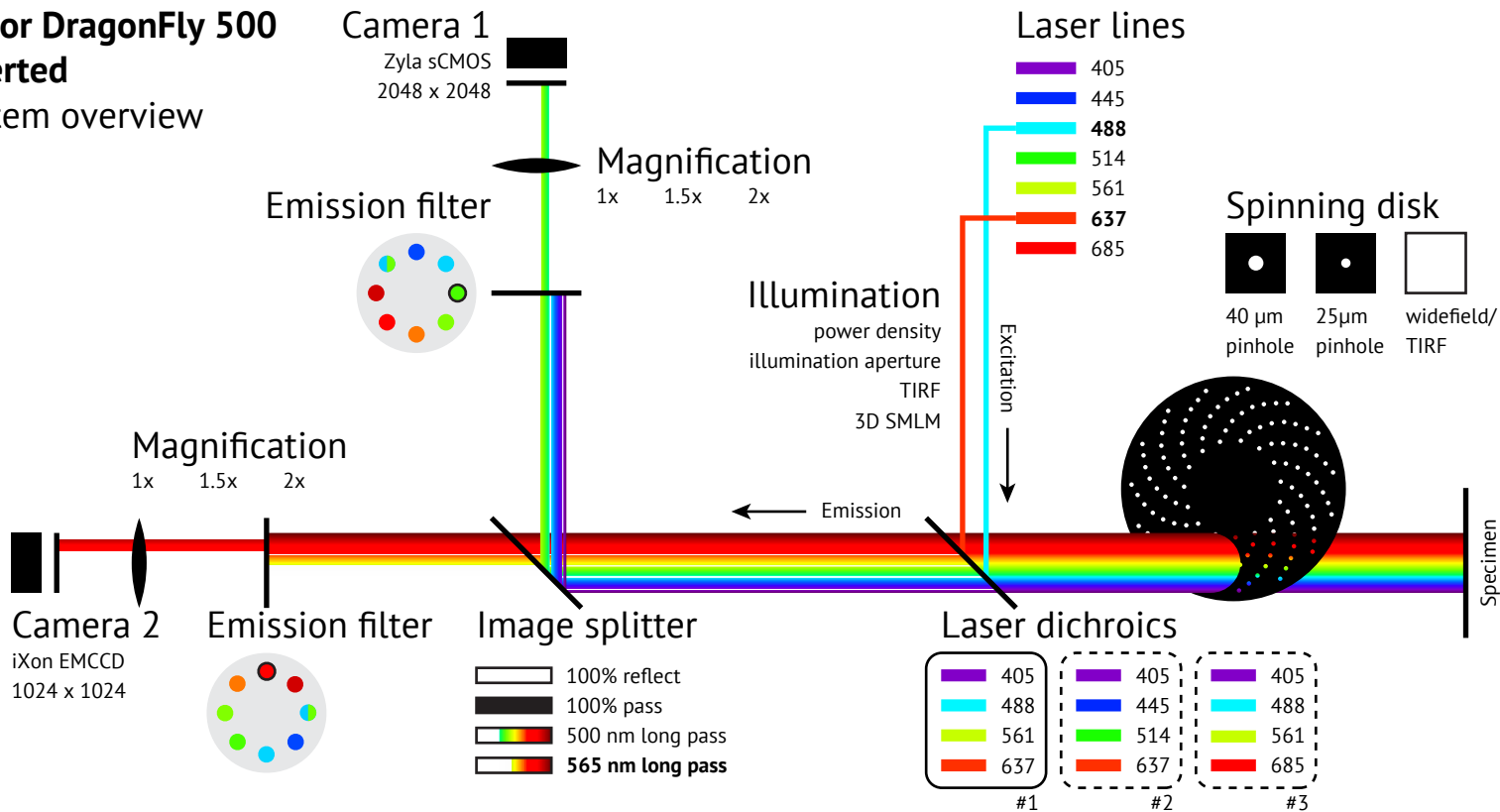
Laser lines

	405
	445
	488
	514
	561
	637
	685

Emission filters

	BP 450/50
	BP 480/40
	BP 525/50
	BP 540/30
	BP 620/60
	BP 700/75
	BP 724/40
	BP 470/25 BP 535/30

Andor DragonFly 500 inverted System overview



Leica AF6000

inverted

(S1-17)

Objective Lenses

10	HC PL FL 10x/0.30
20	HC PL FL 20x/0.50
40	HC PL FL L 40x/0.60 CORR
63	PL FL L 63x/0.7 CORR
63	HXC PL APO 63x/1.30 GLYC (ne=1.4601) CORR 37°C
100	HXC PL APO 100x/1.40-0.70 OIL
1.25	HC PL FL 1.25x/0.04

Filter Cubes

#	Name	Cube	Excitation filter	Emission filter
0	Analysator	ANA	DIC	DIC
1	Dapi	A4	BP 340-380	BP 450-490
2	FITC	GFP	BP 460-488	BP 502-547
3	RFP	RFP	BP 545-551	BP 570-640
4	Texas Red	TXR	BP 542-582	BP 604-664
5	Cy5	Y5	BP 590-650	BP 662-737

Leica DM6B 1

upright

(S1-17)

Objective Lenses

4	C PLAN 4x/0.10
10	HC PL FL 10x/0.30
40	HC PL APO 40x/0.85 CORR
20	HC PL APO 20x/0.70 IMM CORR CS
40	HCX PL APO 40x/1.30 OIL
63	HC PL APO 63x/1.40-0.60 OIL
100	HCX PL FL 100x/1.30 OIL

Filter Cubes

#	Name	Cube	Excitation filter	Emission filter
0	DIC	POL	DIC	DIC
1	Dapi	A4	BP 340-380	BP 450-490
2	DEAC	D	BP 431-441	BP 473-498
3	TRITC	N2.1	BP 532-554	BP 573-613
4	Texas Red	TXR	BP 540-580	BP 593-668
5	FITC	L5	BP 460-500	BP 512-542
6	Cy5	Y5	BP 590-650	BP 662-737
7	Cy7	Y7	BP 672-747	BP 765-855

Leica DM6B 2 upright

(S1-17)

Objective Lenses

5	HCX PL FL 5x/0.15
10	HC PL APO 10x/0.30
20	HC PL APO 20x/0.70 CS
40	HC PL APO 40x/0.70
16	PL FL 16x/0.50 IMM
40	HCX PL APO 40x/1.25-0.75 OIL
63	HCX PL APO 63x/1.40 OIL PH3 CS

Filter Cubes

#	Name	Cube	Excitation filter	Emission filter
0	Dapi	A4 (ATL)	BP 340-380	BP 450-490
1	DEAC	D	BP 431-441	BP 473-498
2	FITC	L5	BP 460-500	BP 512-542
3	TRITC	546	BP 532-554	BP 573-613
4	Texas Red	TXR	BP 542-582	BP 604-664
5	Cy5	Y5	BP 590-650	BP 662-737
6	Cy7	Y7	BP 672-747	BP 765-855
7	Blue/Green/ Red	B/G/R	BP 405-435 BP 487-502 BP 560-580	BP 455-475 BP 515-545 BP 620-660

Zeiss Axio Imager M2

upright

(R-90-029)

Objective Lenses

10	EC Plan-Neofluar 10x/0.3 Ph1 FWD: 5.2 mm
40	Plan-Apochromat 40x/1.4 Oil FWD: 0.13 mm
50	LD EC Epiplan-Neofluar 50x/0.55 DIC FWD: 9.1 mm
100	LD EC Epiplan-Neofluar 100x/0.75 DIC FWD: 4 mm

Filter Cubes

Name	Cube	Excitation filter	Emission filter
		DIC/POL/BF	
DAPI	49	SP 365	BP 445/50
GFP	38 HE	BP 470/40	BP 525/50
	31	BP 565/30	BP 620/60
mCherry	64 HE	BP 587/25	BP 647/70
Cy5	50	BP 640/30	BP 690/50
Cy7	115	BP 710/87	BP 814/91

Zeiss Axio Scan.Z1 slidescanner

(S1-42)

Objective Lenses

5	Fluar 5x/0.25
10	Plan-Apochromat 10x/0.45
20	Plan-Apochromat 20x/0.8
40	Plan-Apochromat 40x/0.95 Corr

LED

	385
	430
	475
	555
	590
	630
	735

Filter Cubes

Name	Cube	Excitation filter	Emission filter
QUAD	90 HE LED		BP 425/30 BP 514/30 BP 592/30 BP 709/100
DAPI	49	SP 365	BP 445/50
CFP	47 HE	BP 436/25	BP 480/40
GFP	38 HE	BP 470/40	BP 525/50
Cy3	43 HE	BP 550/25	BP 605/70
mCherry	64 HE	BP 587/25	BP 647/70
Cy5	50	BP 640/30	BP 690/50
Cy7		BP 710/75	LP 760

Miltenyi UltraMicroscope Blaze lightsheet

(S1-42)

Objective Lenses

1.1 MI Plan
1.1x/0.1
FWD: 16 mm

12 MI Plan
12x/0.53
FWD: 10 mm

Laser lines

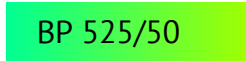
 488

 561

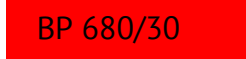
 640

 785

Emission filters

 BP 525/50

 BP 620/60

 BP 680/30

 LP 805

IncuCyte S3

live-cell analysis

(R2-11)

Objective Lenses



Plan Apo λ
4x/0.20



Plan Fluor
10x/0.30



S Plan Fluor
ELWD 20x/0.45

Filter Cubes

Excitation filter



Emission filter



ImageXpress Micro Confocal high-content imaging system

(D3-35)

Objective Lenses

4	Plan Apo λ 4x/0.2 FWD: 20 mm
10	Plan Apo λ 10x/0.45 FWD: 4 mm
20	S Plan Fluor ELWD 20x/0.45 FWD: 8.2-6.9 mm
40	Plan Apo λ 40x/0.95 FWD: 0.11-0.21 mm

20	Plan Apo λ 20x/0.75 FWD: 1 mm
40	S Plan Fluor ELWD 40x/0.65 FWD: 2.7-3.7 mm
60	Plan Apo λ 60x/0.95 FWD: 0.11-0.21 mm
60	Plan Fluor 60x/0.85 FWD: 0.31-0.40 mm

also available

100

L Plan EPI
100x/0.85 CRA
FWD: 0.85-1.2 mm

LED

	390
	475
	542
	560
	635

Filter Cubes

Name

Excitation filter

Emission filter

DAPI

BP 381-392

BP 417-477

FITC

BP 465-500

BP 516-556

TRITC/Cy3

BP 532-554

BP 573-613

Texas Red

BP 542-582

BP 604-644

Cy5

BP 608-648

BP 672-712

CellInsight CX7 LZR

high-content analysis platform

(S3-??)

Objective Lenses

10	10x/0.3
20	20x/0.45
40	40x/0.6

Laser lines

	405
	450
	488
	561
	594
	647
	785

Emission Filters