

# Fluorophore and reagent selection guide for flow cytometry



Invitrogen™ Attune™ NXT Flow Cytometer  
For more information, go to [thermofisher.com/attune](http://thermofisher.com/attune)



Invitrogen™ Attune™ CytPix™ Flow Cytometer  
For more information, go to [thermofisher.com/cytpix](http://thermofisher.com/cytpix)



Invitrogen™ Bigfoot™ Spectral Cell Sorter  
For more information, go to [thermofisher.com/bigfoot](http://thermofisher.com/bigfoot)

Excitation laser	Common emission filters (nm)	Attune NXT channel (nm)*	Recommended dyes for antibody conjugates	Viability dyes (compatible with fixation)	Viability dyes (for unfixed cells)	DNA content/cell cycle dyes (for live cells)	DNA content/cell cycle dyes (for fixed cells)	Apoptosis dyes	Cell proliferation dyes	Reactive oxygen species (ROS) dyes	Phagocytosis dyes	Fluorescent proteins	Other dyes
UV (~350 nm)	379/28	NA											Brilliant Ultra Violet 395
	440/40	NA	Alexa Fluor 350	LIVE/DEAD Fixable Blue (450)	DAPI	Hoechst 33342	FxCycle Violet (DAPI)	Annexin V–Alexa Fluor 350	CellTrace Blue			ECFP	Brilliant Ultra Violet 496
	450/50		Alexa Fluor 405		SYTOX Blue				Click-IT Plus EdU Alexa Fluor 350				Brilliant Ultra Violet 563
	515/30												Brilliant Ultra Violet 615
	585/15												Brilliant Ultra Violet 661
	610/20												Brilliant Ultra Violet 737
Violet (405 nm)	670/25	NA	Brilliant Ultra Violet 737										Brilliant Ultra Violet 737
	740/35	NA	Brilliant Ultra Violet 805										Brilliant Ultra Violet 805
	820/60	NA											
	425/20	VL1 440/50	Super Bright 436	LIVE/DEAD Fixable Violet (451)	DAPI			Annexin V–Pacific Blue	CellTrace Violet			Azurite	Brilliant Violet 421
	440/50	VL1 (V6**) 450/40	eFluor 450		SYTOX Blue	Vybrant DyeCycle Violet	FxCycle Violet (DAPI)	Annexin V–eFluor 450	Click-IT Plus EdU Pacific Blue			Cerulean	VioBlue
	450/50		Pacific Blue					PC-PRO-1				TagBFP	Brilliant Violet 480
	455/50		Alexa Fluor 405									ECFP	Brilliant Violet 510
	450/65											mTurquoise	VioGreen
	460/50											AmCyan	
	510/50	VL2 512/25	eFluor 506	LIVE/DEAD Fixable Aqua (526)					Violet Ratiometric Probe (F2N12S)			T-Sapphire	Brilliant Violet 480
520/35	VL2 (V6) 525/50		LIVE/DEAD Fixable Lime (506)									Brilliant Violet 510	
525/50												VioGreen	
530/40													
550/40													
Blue (488 nm)	585/40	VL3 603/48	Super Bright 600	LIVE/DEAD Fixable Yellow (575)									Brilliant Violet 570
	610/20	VL3 (V6) 610/20	Pacific Orange										Brilliant Violet 605
	660/20	VL4 710/50	Super Bright 645										Brilliant Violet 650
	660/40	VL4 (V6) 660/20	Super Bright 702										Brilliant Violet 711
	710/50	VL5 710/50	Super Bright 702										Brilliant Violet 711
	780/60	VL6 780/60	Super Bright 780										Brilliant Violet 786
	820/60	VL6 780/60	Qdot 800										
	525/50	BL1 530/30	Alexa Fluor 488	LIVE/DEAD Fixable Green (520)	SYTOX Green	Vybrant DyeCycle Green		Annexin V–Alexa Fluor 488	CellTrace CFSE	CellROX Green	pHrodo Green <i>E. coli</i> BioParticles Conjugate	EGFP	Brilliant Blue 515
	525/30	BL1 (G1) 525/50	FITC					Annexin V–FITC	Click-IT Plus EdU Alexa Fluor 488		pHrodo Green <i>S. aureus</i> BioParticles Conjugate	Emerald GFP	
	525/40		NovaFluor Blue 510					CellEvent Caspase-3/7 Green			pHrodo Green <i>S. aureus</i> BioParticles Phagocytosis Kit for Flow Cytometry	EYFP	
530/30		NovaFluor Blue 530					MitoProbe DiOC <sub>2</sub> (3)						
530/40							MitoProbe JC-1						
574/26	BL2 574/26	PE	LIVE/DEAD Fixable Red (615)	7-AAD			Annexin V–PE						BD Horizon PE-CF594
575/30	BL2 (G, Y) 590/40	PE–eFluor 610	LIVE/DEAD Fixable Olive (557)	Propidium Iodide (PI)	Vybrant DyeCycle Orange	FxCycle PI/RNase	TMRE			pHrodo Red <i>E. coli</i> BioParticles Conjugate	EYFP	PE/Dazzle 594	
580/23		PE–Alexa Fluor 610		SYTOX AADvanced			TMRM			pHrodo Red Phagocytosis Kit	Venus		
585/40		NovaFluor Blue 585		SYTOX Orange			MitoProbe JC-1						
588/15		NovaFluor Blue 610–30S											
590/40		NovaFluor Blue 610–70S											
670/30	BL3 695/40	PerCP–eFluor 710					Annexin V–PerCP–eFluor 710						PerCP-Vio 700
675/30		PE–Alexa Fluor 700											
680/30		PE–Cyanine5.5											
685/30		PerCP											
695/40		PerCP–Cyanine5.5											
710/50		NovaFluor Blue 660–40S											
750 LP	BL4 780/60	NovaFluor Blue 660–120S											PE-Vio 770
775/50		PE–Cyanine7											
780/40													
780/60													
Green (532 nm)	555/20	GL1 575/36	Alexa Fluor 532	LIVE/DEAD Fixable Orange (602)	SYTOX Orange	Vybrant DyeCycle Orange		Annexin V–R-PE	CellTrace Yellow	CellROX Orange	pHrodo Red <i>E. coli</i> BioParticles Conjugate	DsRed	
	575/24		Alexa Fluor 561					Annexin V–Alexa Fluor 555				tdTomato	
	585/16		NovaFluor Yellow 570					MitoTracker Orange CMTMRos				YFP	
	585/42		NovaFluor Yellow 590										
	610/20	GL2 620/15	Alexa Fluor 594	LIVE/DEAD Fixable Red (615)	SYTOX AADvanced	Vybrant DyeCycle Orange	FxCycle PI/RNase	Annexin V–Alexa Fluor 568	Click-IT Plus EdU Alexa Fluor 594			mCherry	PE/Dazzle 594
	620/15		NovaFluor Yellow 610	LIVE/DEAD Fixable Orange (602)	Propidium Iodide			Annexin V–Alexa Fluor 594					
630/30		PE–Texas Red					MitoTracker Red CMXRos						
Yellow (561 nm)	695/40	GL3 695/40	NovaFluor Yellow 660		SYTOX AADvanced	Vybrant DyeCycle Ruby							
	710/50		NovaFluor Yellow 690										
	780/60	GL4 780/60	PE–Cyanine7										
	585/40	YL1 585/16	Alexa Fluor 561		Propidium Iodide	Vybrant DyeCycle Orange		MitoTracker Orange CMTMRos	CellTrace Yellow	CellROX Orange	pHrodo Red <i>E. coli</i> BioParticles Conjugate	mOrange	
	585/15		NovaFluor Yellow 570		SYTOX Orange			MitoTracker Red CMXRos				RFP	
590/40		NovaFluor Yellow 590					TMRE						
Red (637 nm)	610/20	YL2 620/15	NovaFluor Yellow 610	LIVE/DEAD Fixable Red (615)	7-AAD	Vybrant DyeCycle Orange	FxCycle PI/RNase	Annexin V–Alexa Fluor 568	Click-IT Plus EdU Alexa Fluor 594			DsRed	ECD
	613/20		PE–eFluor 610	LIVE/DEAD Fixable Orange (602)	Propidium Iodide			Annexin V–Alexa Fluor 568				mKate	BD Horizon PE-CF594
	615/50		PE–Alexa Fluor 610		SYTOX AADvanced			Annexin V–Alexa Fluor 594				mStrawberry	PE/Dazzle 594
	620/15		PE–Texas Red		SYTOX Orange							tdTomato	PE-Vio 615
	620/30		NovaFluor Yellow 660										
	670/30	YL3 695/40	NovaFluor Yellow 690										
675/30	YL3 (B/Y/R1/V6) 780/60	NovaFluor Yellow 700											
680/30		NovaFluor Yellow 700											
695/30		PE–Alexa Fluor 700											
695/40		PE–Cyanine5.5											
750 LP	YL4 780/60	NovaFluor Yellow 730											PE-Vio 770
780/40		PE–Cyanine7											
780/60													
Near IR (808 nm)	660/20	RL1 670/14	Alexa Fluor 647	LIVE/DEAD Fixable Far Red (665)	SYTOX Red		FxCycle Far Red	Annexin V–Alexa Fluor 647	CellTrace Far Red	CellROX Deep Red			
	661/20		Alexa Fluor 660					Annexin V–Alexa Fluor 680					
	665/20		eFluor 660					Annexin V–APC	Click-IT Plus EdU Alexa Fluor 647				
	670/14		APC					MitoProbe DiI <sub>C</sub> (5)					
670/30		APC–Cyanine5.5					TO-PRO-3						
675/30		NovaFluor Red 660											
720/30	RL2 720/30	NovaFluor Red 685	LIVE/DEAD Fixable Scarlet (723)										APC–R700
730/45		Alexa Fluor 700											
750 LP	RL3 780/60	NovaFluor Red 700											
775/50		APC–eFluor 780	LIVE/DEAD Fixable Near IR (775)										APC–H7
780/40		APC–Alexa Fluor 750	LIVE/DEAD Fixable Near IR (780)										APC-Vio 770
780/60		APC–Cyanine7											
885/40			LIVE/DEAD Fixable Near IR (876)										

\* Filter sets change depending on the configuration of the Attune NXT Flow Cytometer in use. \*\* V6: Attune NXT violet 6-channel configuration option. † G: green laser option. † Y: yellow laser option. † B: blue laser option. † R: red laser option. † Note: Fixable viability dyes are recommended for use with Invitrogen™ NovaFluor™ dyes.

To build your high-parameter panels with our intuitive Invitrogen™ Flow Cytometry Panel Builder (compatible with spectral flow cytometers), go to [thermofisher.com/panelbuilder](http://thermofisher.com/panelbuilder)

To find out more about Invitrogen™ antibodies, assays, and instruments for flow cytometry, go to [thermofisher.com/flowcytometry](http://thermofisher.com/flowcytometry)

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