

Fluorophore Reference Guide

FLUORESCENT DYES

FLUORESCENT DYE	EXCITATION MAX.	EMISSION MAX.	RECOMMENDED FILTERS
A			
Acridine Orange (+DNA)	500	526	485/20-528/20
Acridine Orange (+RNA)	460	650	460/40-645/40
AlamarBlue®	560	590	540/35-590/20
Alexa Fluor® 350	346	442	340/30-440/40
Alexa Fluor® 405	402	421	380/20-440/40
Alexa Fluor® 430	434	539	420/50-545/40
Alexa Fluor® 488	495	519	485/20-528/20
Alexa Fluor® 532	531	554	530/25-565/10
Alexa Fluor® 546	556	573	540/25-590/20
Alexa Fluor® 555	555	565	540/25-590/20
Alexa Fluor® 568	578	603	560/20-620/40
Alexa Fluor® 594	590	617	590/20-620/15
Alexa Fluor® 633	632	647	620/15-665/34
Alexa Fluor® 647	650	668	620/40-680/30
Alexa Fluor® 700	702	723	680/30-730/20
Allophycocyanin (APC)	650	660	620/40-680/30
Aminomethylcoumarin (AMCA)	345-350	440-460	360/40-460/40
7-Amino-4-trifluoromethylcoumarin (AFC)	380	500	400/30-508/20
7-Amino-4-methylcoumarin (7-AMC)	351	430	360/40-440/40
AttoPhos®	435	555	440/30-560/40
B			
BCCECF (high pH)	503	528	485/20-530/25
BODIPY® FL	505	513	485/20-530/25
BODIPY® TMR-X	542	574	530/25-590/35
BODIPY® TR-X	589	617	590/20-635/32
C			
Calcein	494	517	485/20-528/20
Calcium Crimson™	590	615	575/15-635/32
Calcium Green™-1	506	531	485/20-530/25
Calcium Orange™	549	576	540/25-590/35
Chlorophyll A	430	680	440/40-680/30
Cy2®	489	506	485/20-530/25
Cy3®	550	570	540/25-590/20
Cy3.5®	581	596	575/15-620/40
Cy5®	649	670	620/40-680/30
Cy5.5®	675	694	670/10-710/20
Cy7®	743	767	670/10-710/20
D			
Dansyl Chloride	335	518	340/30-530/25
DAPI	358	461	360/40-460/40
Dil	549	565	540/25-590/20
DyLight® 350	353	432	340/30-440/40
DyLight® 488	493	518	485/20-528/20
DyLight® 550	562	576	540/35-600/40
DyLight® 594	593	618	590/20-645/40
DyLight® 633	638	658	620/40-665/8
DyLight® 650	652	672	620/40-680/30
E			
Eosin	524	544	508/20-560/40
Ethidium Bromide	518	605	516/20-600/40
F			
5-FAM (5-Carboxyfluorescein)	492	518	485/20-530/25
Fluorescein	494	518	485/20-528/20
Fluorescamine	380	464	380/20-460/40
FluorX®	494	520	485/20-528/20
Fluo-3	506	526	500/27-540/25
Fluo-4	494	516	485/20-530/25
Fura Red™	436/472	637/657	
Fura-2	338/366	505	340/30 and 380/20-508/20
H			
HEX™	535	556	530/25-565/10
HiLyte Fluor™ 405	404	428	380/20-440/40
HiLyte Fluor™ 488	497	525	485/20-528/20
HiLyte Fluor™ 555	550	566	540/25-590/20
HiLyte Fluor™ 594	593	616	590/20-620/15
HiLyte Fluor™ 647	649	672	620/40-680/30
Hoechst 33258 & 33342	352	461	360/40-460/40
7-Hydroxy-4-methylcoumarin	360	449	360/40-460/40
3-(4-Hydroxyphenyl)propionic acid (HPPA)	330	410	320/20-400/30
I			
Indo-1	330/346	401/475	360/40-420/50 and 485/20
J			
JC-1	514/585	529/590	485/20-528/20 and 540/25-590/35
6-JOE	525	555	516/20-560/20
JOJO™-1	529	545	516/20-560/20
L			
Lucifer Yellow	428	536	440/30-530/25
LysoSensor™ Blue	373	425	360/40-440/40
LysoSensor™ Green	442	505	440/40-530/25
LysoSensor™ Yellow/Blue (low pH)	384	540	380/20-540/35
LysoTracker™ Green	504	511	
LysoTracker™ Red	577	592	
LysoTracker™ Yellow	465	535	
M			
4-Methylumbelliferone	360	448	360/40-460/40
MitoTracker® Green	490	516	485/20-528/20
MitoTracker® Orange	551	576	540/25-590/20
MitoTracker® Red	579	599	560/20-620/40
N			
NADH	340	445	340/30-440/40
NBD	465	535	460/40-530/25
Neutral Red	540	640	530/25-645/40
Nile Red	549	628	540/25-620/40
O			
Oregon Green® 488	496	524	485/20-528/20
Oregon Green® 514	511	530	500/27-540/25
P			
Pacific Blue™	410	455	360/40-460/40
C-Phycocyanin	620	647	
B-Phycocerythrin	545	575	530/25-590/20
R-Phycocerythrin	565	575	540/35-600/40
POPO™-1, PO-PRO™-1	435	455	
POPO™-3	534	570	
PO-PRO™-3	539	567	
Propidium iodide	535	617	530/25-620/40
Pyrene	345	378	340/11-380/20
Pyronin Y	548	570	530/25-590/20
Q			
QuantaBlu™	325	420	320/20-420/50
Quinacrine Mustard	423	503	420/50-530/25
R			
Resazurin	575	585	540/35-590/20
Resorufin	570	584	540/35-600/40
RH 414	532	716	
Rhod-2	552	578	540/25-590/20
Rhodamine B	554	627	545/40-620/40
Rhodamine Green™	500	525	485/20-528/20
Rhodamine Red™	570	590	560/20-620/40
Rhodamine 110	498	521	485/20-528/20
Rhodamine 123	511	534	500/27-540/25
Rhodamine 6G	526	551	516/20-560/20
5-ROX (5-Carboxy-X-rhodamine)	575	602	560/20-620/40
S			
SBF1	340/380	505	340/11-380/20 and 500/27
Sodium Green™	507	532	
SpectrumAqua™	433	480	
SpectrumBlue™	400	450	
SpectrumGold™	530	555	
SpectrumGreen™	497	524	
SpectrumOrange™	559	588	
SpectrumRed™	592	612	
SpectrumRed™	655	675	
Sulforhodamine 101	586	605	560/40-620/40
Sulforhodamine B	565	586	540/35-590/20
SYBR® Green I	497	520	485/20-528/20
SYTOX® Blue	444	480	420/50-500/27
SYTOX® Green	504	523	485/20-528/20
SYTOX® Orange	547	570	530/25-590/20
T			
TAMRA ((Carboxy)tetramethylrhodamine)	542	568	530/25-590/20
Tetracycline	390-425	525-560	400/30-540/35
Texas Red®	596	615	590/20-635/32
Thiazine Red R	510	580	
Thiazole Orange	509	533	485/40-560/40
Thioflavin T	440	482	440/30-485/20
THIOLYTE®	370-385	477-484	360/40-460/40
TOTO®-1, TO-PRO®-1	514	533	485/40-560/20
TOTO®-3, TO-PRO®-3	642	660	620/40-680/30
TRITC (Tetramethylrhodamine)	557	576	540/25-590/20
Tryptophan	280	300-350	284/10-340/30
Tyrosine	276	303	276/10-310/20
V			
VIC	538	554	530/25-575/15
X			
XRITC (X-Rhodamine-isothiocyanate)	572	596	560/20-620/40
Y			
YOYO®-1, YO-PRO®-1	491	509	485/20-516/20
YOYO®-3, YO-PRO®-3	612	631	590/20-665/34

PROTEINS

FLUORESCENT PROTEIN	EXCITATION MAX.	EMISSION MAX.	RECOMMENDED FILTERS
Blue Fluorescent Proteins			
Azurite	384	450	380/20-460/40
EBFP	380	440	380/20-440/40
mTagBFP	402	457	400/30-460/40
T-Sapphire	399	511	400/30-508/20
Y66H	382	459	380/20-460/40
Cyan Fluorescent Proteins			
AmCyan1	458	489	440/40-500/27
Cerulean	433	475	420/50-485/20
CyPet	435	477	420/50-485/20
ECFP	434	477	420/50-485/20
mECFP	433	475	420/50-485/20
mTFP1 (Teal)	462	492	440/40-500/27
TagCFP	458	480	440/30-485/20
Green Fluorescent Proteins			
EGFP	484	507	485/20-516/20
GFP-S65T	488	509	485/20-516/20
GFP (uv)	395	509	395/25-508/20
GFP (wt)	395	509	395/25-508/20
	475	509	460/40-516/20
mWasabi	493	509	485/20-516/20
Stemmer	395	509	400/30-508/20
TurboGFP	482	502	475/20-508/20
ZsGreen1	493	505	485/20-516/20
Yellow Fluorescent Proteins			
EYFP	514	527	500/27-540/25
mBanana	540	553	528/20-560/15
mCitrine	516	529	500/27-540/25
PhiYFP	525	537	516/20-550/10
TagYFP	508	524	485/40-540/25
Venus	515	528	500/27-540/25
ZsYellow1	529	539	516/20-550/10
Orange Fluorescent Proteins			
DsRed/RFP	558	583	540/35-590/20
DsRed2	563	582	540/35-590/20
mOrange	548	562	530/25-575/10
TagRFP	555	584	540/35-590/20
tdTomato	554	581	540/35-590/20
Red Fluorescent Proteins			
AsRed2	576	592	560/20-596/15
HcRed1	588	618	590/20-635/32
mApple	568	592	540/35-600/40
mCherry	587	610	585/10-620/15
mPlum	590	649	590/20-645/40
mRFP1	584	607	575/15-610/10
mRuby	558	605	540/35-620/40
mStrawberry	574	596	560/20-620/40

ASSAYS

FLUORESCENT ASSAY KIT	EXCITATION MAX.	EMISSION MAX.	RECOMMENDED FILTERS
Adapta® Universal Kinase Assay	340	615-665	340/30-620/10 and 665/8
AlphaISA™ Assay	680	615	680/30-615/16
AlphaScreen™ Assay	680	520-620	680/30-570/100
Amplicx® Red	570	585	540/35-590/20
Apo-ONE® Homogeneous Caspase-3/7 Assay	499	521	485/20-530/25
ApoTox-Glo™ Triplex Assay	400	505	400/30-508/20
	485	520	485/20-528/20
	465	550	450/50-560/40
CBQCA Protein Quantitation Kit	579	584	560/15-590/20
CellTiter-Blue® Cell Viability Assay	502	523	485/20-528/20
CyQUANT™ Cell Proliferation Assays	480	530	485/20-528/20
Cyto-ID® Autophagy detection kit	560	590	540/35-590/20
CytoTox-ONE™ Homogeneous Membrane Integrity Assay	340	615	360/40-620/40
DELTA® TRF Assays			380/20-440/40
EndoLISA® Endotoxin Test	502	512	485/20-528/20
EnzChek® Ultra Amylase Assay Kit	485	530	485/20-528/20
EnzChek® Myeloperoxidase (MPO) Activity Assay Kit	505	513	485/20-528/20
EnzChek® Protease Assay Kit - green fluorescence	589	617	590/20-645/40
EnzChek® Protease Assay Kit - red fluorescence	340	490	340/30-500/27
EnzoLyte™ 490 Protease Assay Kit *Fluorimetric*	490	520	485/20-528/20
EnzoLyte™ 520 Protease Assay Kit *Fluorimetric*	590	620	590/20-620/15
EnzoLyte™ 620 Protease Assay Kit *Fluorimetric*	409	447/520	400/30-460/40 and 528/20
GeneBLAzer® Assays	330	620/665	330/80-620/10 and 665/8
HTRF® Assays Eu red	340	620/665	340/30-620/10 and 665/8
HTRF® Assays Tb red	340	620/520	340/30-620/10 and 520/10
HTRF® Assays Tb green	485	520	485/20-528/20
Invader® Assay	560	620	560/20-620/15
LanthaScreen™ Assays	340	495/520	340/30-495/10 and 520/25
LANCE® TR-FRET Assays	340	615/665	360/40-620/10 and 665/8
LIVE/DEAD® Viability/Cytotoxicity Kit	494	517	485/20-528/20
	528	617	528/20-620/40
Mito-ID® Membrane Potential Cytotoxicity Kit	480	527/590	485/20-528/20 and 590/20
NanoOrange® Protein Quantitation Kit	470	570	485/20-580/50
Omnia® Kinase Assays	360	485	360/40-485/20
PolarScreen™ Competitor Assay (green FP)	485	535	485/20-582/20
PolarScreen™ Competitor Assay (red FP)	535	590	530/25-590/35
Predictor™ hERG Fluorescence Polarization Assay Kit	540	573	530/25-590/35
Quant-iT™ dsDNA Assay Kit	510	527	485/20-528/20
Quant-iT™ OliGreen® ssDNA Reagent	500	525	485/20-528/20
Quant-iT™ PicoGreen® dsDNA Reagent	502	523	485/20-528/20
Quant-iT™ Protein Assay Kit	470	570	460/40-590/35
Quant-iT™ RiboGreen® RNA Reagent	500	525	485/20-528/20
Quant-iT™ RNA Assay Kit	644	673	620/40-680/30
Transcreener® Far Red FP Assay	632	647	620/40-680/30
Transcreener® FI Assay	588	613	590/20-620/10
Transcreener® TR-FRET Red Assay	330	665	340/30-620/10 and 665/8
Z'-LYTE™ Kinase Assay Kit	400	445/520	400/30-460/40 and 528/20

