

Recommended filter pairs for various fluorescent dyes for Fluoroskan and Fluoroskan FL Microplate Fluorometers

In this table, you will find the most commonly used filter and fluorescent dye combinations for Thermo Scientific™ Fluoroskan™ and Fluoroskan™ FL Microplate Fluorometers. Here you can easily find the correct filter pair required for the listed fluorescent dye. The table also includes ordering information for the filters.

Note 1: This table contains only a partial list of the fluorescent dyes that can be used with the Fluoroskan and Fluoroskan FL Microplate Fluorometers.

Note 2: Spectral peaks may shift as a function of temperature, pH, solvent, or coupling chemistry. The spectra are often measured at a certain pH of the solvent, which is not necessarily the same pH used in the actual assay.

Fluorescent dye	Recommended excitation filter (nm)	Recommended emission filter (nm)	Cat. No.
HPPA (3-(<i>p</i> -Hydroxyphenyl)propionic acid)	320	405	1423202/1424052
cGDPR	320	405	1423202/1424052
<i>cis</i> -Parinaric acid	320	420	1423202/142420220
4-MeU (4-Methylumbelliferone, 7-hydroxy-4-methylcoumarin)	320	460	1423202/1424602
Saxitoxin	335	405	1423352/1424052
<i>N</i> -(1-Pyrene)iodoacetamide	340	380	142340210/1423802
2,3-Diaminonaphthalene (DAN)	340	380	142340210/1423802
SPQ (6-Methoxy- <i>N</i> -(3-sulfopropyl)quinolinium, inner salt)	340	380	1423402/142440210
NADH	340	440	1423402/142440210 (optimal)
	355	460	1423552/1424602* (good)
Indo-1 calcium indicator (ratio of measurements at two emission wavelengths)			
Without calcium	340	405	142340210/1424052
With calcium	340	485	142340210/1424852
PBFI	340 and 380	510	1423402/1423802/1425102
Pyrenyl-actin	350	405	142350220/1424052
2,3-Diaminonaphthalene (DAN), 1 <i>H</i> -naphthotriazole derivatives	350	415	142350220/142415210 (optimal)
	355	460	1423552/1424602* (good)
Alexa Fluor 350	350	440	142350220/142440210 (optimal)
	355	460	1423552/1424602* (good)

* Standard factory-installed filter pair for Fluoroskan and Fluoroskan FL instruments.

Fluorescent dye	Recommended excitation filter (nm)	Recommended emission filter (nm)	Cat. No.
MANT-GDP	355	440	1423552/142440210 (optimal)
	355	460	1423552/1424602* (good)
6,8-Difluoro-7-hydroxy-4-methylcoumarin	355	450	1423552/1424502 (optimal)
	355	460	1423552/1424602* (good)
6-((7-Amino-4-methylcoumarin-3-acetyl amino)hexanoic acid (MCA)	355	450	1423552/1424502 (optimal)
	355	460	1423552/1424602* (good)
DAPI + DNA	355	460	1423552/1424602
Hoechst 33258 (bisbenzimidazole H33258)	355	460	1423552/1424602
Hoechst 33342 (bisbenzimidazole H33342)	355	460	1423552/1424602
4-MeU (4-Methylumbelliferone, 7-hydroxy-4-methylcoumarin)	355	460	1423552/1424602
Histamine	355	460	1423552/1424602
2,3-Diaminonaphthalene (DAN), benzoquinoline derivatives	355	538	1423552/1425382
6-Aminoquinoline (6-AQ)	355	544	1423552/1425442
7-Amino-4-methylcoumarin (7-AMC)	355	460	1423552/1424602
Thiochrome	370	440	142370212/142440210 (optimal)
	355	460	1423552/1424602* (good)
Fluorometric recombinant Factor C (rFC)	370	440	142370212/142440210
4-MUNANA (4-Methylumbelliferyl-N-acetyl- α -D-neuraminic acid)	370	444	142370212/1424442
CPM (7-Diethylamino-3-(4'-maleimidylphenyl)-4-methylcoumarin)	380	460	1423802/1424602 (optimal)
	355	460	1423552/1424602* (good)
1,8-ANS (1-Anilinonaphthalene-8-sulfonic acid)	380	480	1423802/1424802
CPM	390	460	143902/1424602
Phenylalanine-ninhydrin reaction	390	485	1423902/1424852
Monobromobimane (mBBr)	394	490	1423902/1424902
Monocholeobimane (mBCl)	388	482	1423902/1424902
7-Amino-trifluoromethylcoumarin (AFC)	390	510	1423902/1425102
7-Hydroxy-4-trifluoromethylcoumarin (HFC)	390	510	1423902/1425102
Sapphire GFP	390	510	1423902/1425102
wtGFP	390	510	1423902/1425102
7-Hydroxycoumarin	405	444	142405210/1424442
3-Cyano-7-hydroxycoumarin (CHC)	405	460	142405210/1424602
3-Cyano-7-ethoxycoumarin (CEC)	405	460	142405210/1424602
2-Hydroxy-1-naphthaldehyde- <i>p</i> -methoxybenzoylhydrazone, with aluminum ions	415	475	142415210/142475210
Alexa Fluor 430	430	538	142430210/1425382
Lucifer yellow	430	538	142430210/1425382
CFP	430	485	142430210/1425382
KMG-20-AM	444	510	1424442/1425102
AttoPhos AP fluorescent substrate	444	555	1424442/1425552
Chlorophyll	444	680	1424442/1426802
Thioflavin T	450	485	1424502/1424852
Pyranine (8-Hydroxypyrene-1,3,6-trisulfonic acid, trisodium salt) (HPTS)	450	517	1424502/1425172

* Standard factory-installed filter pair for Fluoroskan and Fluoroskan FL instruments

Fluorescent dye	Recommended excitation filter (nm)	Recommended emission filter (nm)	Cat. No.
hrGFP (Stratagene)	485	510	1424852/1425102 (optimal)
	485	538	1424852/1425382* (good)
Fluo-4	485	518	1424852/1425182 (optimal)
	485	538	1424852/1425382* (good)
Rhodamine 110	485	518	1424852/1425182 (optimal)
	485	538	1424852/1425382* (good)
SYTOX Green	485	527	1424852/1425272 (optimal)
	485	538	1424852/1425382* (good)
rrGFP (<i>Renilla reniformis</i> GFP)	485	527	1424852/1425272 (optimal)
	485	538	1424852/1425382* (good)
Alexa Fluor 488	485	538	1424852/1425382*
BCECF (high pH)	460	518	1424602/1425182 (optimal)
	485	538	1424852/1425382* (good)
Fluorescein	485	538	1424852/1425382*
OliGreen	485	538	1424852/1425382*
RiboGreen	485	538	1424852/1425382*
Acridine Orange	485	538	1424852/1425382*
NanoOrange	485	590	1424852/1425902 (optimal)
	485	538	1424852/1425382* (good)
Calcein AM	485	518	1424852/1425182 (optimal)
	485	538	1424852/1425382* (good)
Carboxyfluorescein (FAM)	485	518	1424852/1425182 (optimal)
	485	538	1424852/1425382* (good)
SYBR Green I and II	485	518	1424852/1425182 (optimal)
	485	538	1424852/1425382* (good)
EGFP, GFP-S65	485	527	1424852/1425272 (optimal)
	485	538	1424852/1425382* (good)
EYFP, Yellow Fluorescent Protein	485	527	1424852/1425272 (optimal)
	485	538	1424852/1425382* (good)
Fluorescein isothiocyanate (FITC)	485	538	1424852/1425382*
Fluorescein	485	538	1424852/1425382*
Fluo-3	485	538	1424852/1425383*
Rhodamine 123	485	538	1424852/1425384*
PicoGreen	485	538	1424852/1425385*
mVenus	490	527	1424902/1425272 (optimal)
	485	538	1424852/1425382* (good)
5-Chloromethylfluorescein diacetate	492	518	1424922/1425182 (optimal)
	485	538	1424852/1425382* (good)
DAF-FM-DA	492	518	1424922/14251282 (optimal)
	485	538	1424852/1425382* (good)
CoroNa Green	492	518	1424922/1425182 (optimal)
	485	538	1424852/1425382* (good)
BODIPY FL	492	518	1424922/1425182 (optimal)
	485	538	1424852/1425382* (good)
2',7'-Dichlorofluorescein (DCF)	492	527	1424922/1425272 (optimal)
	485	538	1424852/1425382* (good)
R-Phycoerythrin	492	575	1424922/1425752 (optimal)

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Fluorescent dye	Recommended excitation filter (nm)	Recommended emission filter (nm)	Cat. No.
Sodium Green	510	542	1425102/1425422
Nile red, with triglyceride	510	590	1425102/1425902
6-Carboxyrhodamine	515	555	1425152/1425552
6-JOE and VIC	515	555	1425152/1425552
Thiobarbituric acid reactive substances (TBARS)	515	555	1425152/1425552
Dihydroethidium (DHE) bound to DNA	517	604	1425172/14256042
Yakima Yellow	520	555	1425202/1425552
Ethidium bromide + DNA	520	604	1425202/14256042
d-R110	521	542	1425212/1425422
6-HEX	521	555	1425212/1425552
Ethidium homodimer + DNA	530	620	1425302/1425620220
Propidium iodide + DNA	530	635	1425302/1425635255
SYTOX Orange	540	570	142540210/142570210
Alexa Fluor 555	540	570	142540210/142570210
B-Phycoerythrin	540	575	142540210/1425752
Safranin	540	575	142540210/1425752
DiIC ₁₈ (3), DiIC ₁₂ (3)	544	575	1425442/1425902
Rhodamine B	544	590	1425442/1425902
Tetramethylrhodamine	544	590	1425442/1425902
alamarBlue	544	590	1425442/1425902
Cy ³	544	590	1425442/1425902
DsRed (red fluorescent protein)	544	590	1425442/1425902
Octadecyl rhodamine B	544	590	1425442/1425902
Resorufin	544	590	1425442/1425902
Amplex UltraRed	544	590	1425442/1425902
R-Phycoerythrin	544	590	1425442/1425902
5-TAMRA and 6-TAMRA	544	590	1425442/1425902
Tetramethylrhodamine isothiocyanate (TRITC)	544	590	1425442/1425902
MitoTracker Orange	544	590	1425442/1425902
BODIPY 558	544	590	1425442/1425902
Nile red, with phospholipid	544	635	1425442/1425635255
d-R6G	550	570	142550208/142570210
DyLight 547	550	570	142550208/142570210

Fluorescent dye	Recommended excitation filter (nm)	Recommended emission filter (nm)	Cat. No.
Rhodamine Red-X	578	597	1423578206/1425972
Sulforhodamine	578	597	1423578206/1425972
ROX	578	604	142578206/1426042
MitoTracker Red	578	604	142578206/1426042
Alexa Fluor 568	578	604	142578206/1426042
BODIPY TR	584	612	1425842/1426122
Sulforhodamine 101	584	612	1425842/1426122
Texas Red	584	612	1425842/1426122
mCherry	584	612	1425842/1426122
Alexa Fluor 594	584	620	1425842/1426202
mPlum	584	650	1425842/142650220
dROX	603	621	1426032/1426212
SYTO 64	603	621	1426032/1426212
Alexa Fluor 610	603	640	1426032/1426402
C-phycoerythrin	603	640	1426032/1426402
CAL Fluor 635	604	646	1426042/1426462
IRDye 700DX	620	700	142620220/1427002
Cy ⁵	646	678	1426462/142678210
3,3'-Dipropylthiadicarbocyanine iodide (DiSC ₃ (5))	646	678	1426462/142678210
DyLight 647	646	678	1426462/142678210
Alexa Fluor 660	646	700	1426462/1427002
Alexa Fluor 680	678	700	142678210/1427002
IRDye 800, 800CW, 800RS	700	790	1427002/1427902
Mag-Fura-2 (ratio of measurements at two Ex/Em wavelength pairs)			
Without magnesium	370	510	142370212/1425102
With magnesium	320	485	1423202/142485216
Fura-2 (ratio of measurements at two excitation wavelengths)			
Without calcium	380	510	1423802/1425102
With calcium	340	510	1423802/1425102
Carboxy-SNARF-1 pH indicator (ratio of measurements at two emission wavelengths)			
Low pH	485	578	1424852/142578206
High pH	485	640	1424852/1426402
JC-1 mitochondrial potential sensor (ratio of measurements at two emission wavelengths)			
Monomer	485	538	1424852/1425382
Aggregate	485	590	1424852/1525902

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