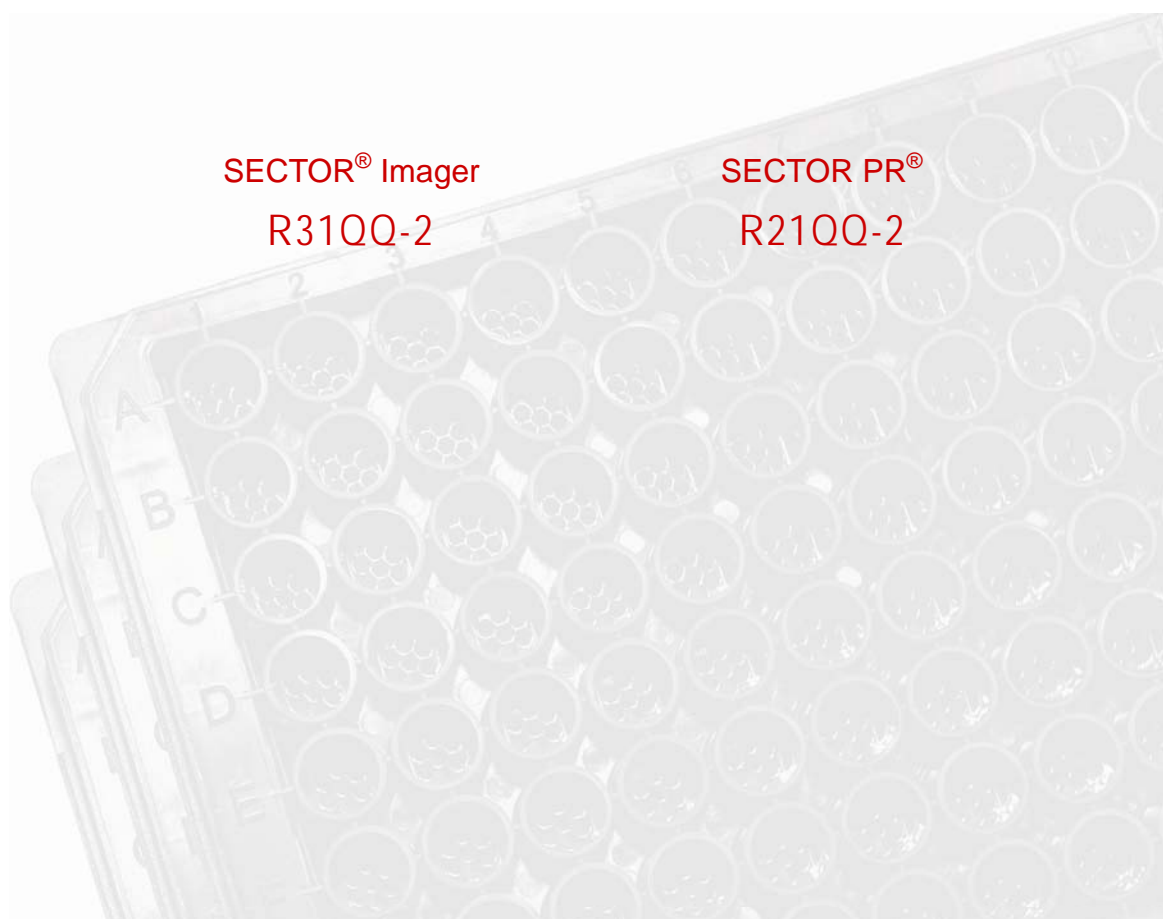


Meso Scale Discovery[®]

Performance Qualification Kit

SECTOR[®] Imager
R31QQ-2

SECTOR PR[®]
R21QQ-2



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Meso Scale Discovery

Performance Qualification Kit

This package insert must be read in its entirety before using this product.

FOR RESEARCH USE ONLY.

NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES.

Meso Scale Discovery

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Ordering Information

ordering information

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Introduction

introduction

MSD[®] Performance Qualification (PQ) Kit provides a rapid and convenient method for verifying the performance of SECTOR Imager instruments (6000, 2400, 2400a) and SECTOR PR instruments (100 and 400).

This procedure is a measurement of signal, background, and dark (electronic) noise of the system. The intervals for conducting PQ are defined by the operator and the regulations of the lab in which the instrument is being utilized.

This procedure can only verify that the instrument is performing to its predetermined specifications.

Reagents Supplied

reagents supplied

Product Description	Storage	Quantity per Kit	
		R31QQ-2	R21QQ-2
MULTI-ARRAY [®] 96-well Plates	RT	10 plates L15XA-1	10 plates L13XA-1
Free Tag (FT) ¹ signal level at 15000 counts	RT	1 bottle (250 mL)	1 bottle (250 mL)
Read Buffer T (1X) R92TA-2 (200 mL)	RT	1 bottle (200 mL)	1 bottle (200 mL)

Important: Do not leave the Free Tag and the Read Buffer T bottles open for an extended period of time. Evaporation of these solutions will result in failure of the assay.

¹ 10nM free SULFO-TAG[™] in Read Buffer T (1X)

III Safety

s a f e t y

Consult the *User's Guide to Instrument Operation* for all the safety precautions and regulations concerning the handling of materials and the instrument's electrical and mechanical components before working with the SECTOR Imager or SECTOR PR instruments.

Safe laboratory practices and personal protective equipment such as gloves, safety glasses, and lab coats should be used at all times during the handling of all kit components. Follow laboratory rules and requirements recommended by the local, state, and federal guidelines.

IV Required Materials

r e q u i r e d m a t e r i a l s

Note: All performance information including standard signal levels is based on 150 μ L read volume in 96-well MULTI-ARRAY Microplates and using standard read parameters and specified instrument operating environment.

- a. **Plate Type 1. Free Tag (FT):** 10 nM free SULFO-TAG in Read Buffer T.
(150 μ L in 96 well plates)
- b. **Plate Type 2. Read Buffer (RB):** Read Buffer T (1X).
(150 μ L in 96 well plates)
- c. **Plate Type 3. Dark Noise** is defined as the standard deviation of the signal values from a dark image. The sources of dark noise are statistical variations in dark current and read noise from the A/D conversion in the CCD.
- d. **Dispenser Accuracy and Precision**
Dispensing Accuracy: $\pm 3\%$ or 1 μ L, whichever is greater
Dispensing Precision: CV $\leq 3\%$ or SD ≤ 0.4 μ L whichever is greater

V Test Protocol

test protocol

Prior to testing, confirm the following:

- a. The instrument is powered.
- b. The instrument computer is powered.
- c. MSD DISCOVERY WORKBENCH® software is running.
- d. The instrument camera is at the operating temperature (For SECTOR Imagers only).

Verify operation of the instrument by running the Electronic Demonstration Plate. The following wells should have signals greater than 1000 counts: A9, B10, C11, D12, H1, G2, F3, and E4. All other wells should have signals lower than 200 counts.

The PQ test should take approximately 15-30 minutes.

The average, standard deviation and CV values are calculated for FT.

The average and standard deviation are calculated for Read Buffer (RB) and Dark Noise.

1. Prepare the plates as follows:
 Fill one 96-well plate with 150 µL of Free Tag in each well.
 Fill one 96-well plate with 150 µL of Read Buffer T (1X) in each well.
 Leave the third plate empty.
2. Record the lot number and expiration dates of all the reagents and plates in the table provided on page 7.
3. Incubate for 15 minutes (± 5min) to allow the reagents and plates to equilibrate and come to room temperature.
4. Start the reader and open up the DISCOVERY WORKBENCH.
5. Read the three plates on the instrument and fill out the appropriate details on the Performance Check Table in section VII.

VI Specifications

specifications

For SECTOR Imager Instruments

	Max	Nominal	Min
Free Tag Mean	18000	15000	12000
Free Tag %CV	6.00%	3.00%	0.00%
Read Buffer T (1x) Mean	100	50	25
Read Buffer T (1x) SD	25	10	0
Dark Signal Mean	16	0	-16
Dark Noise (SD)	16	10	0

For SECTOR PR Instruments

	Max	Nominal	Min
Free Tag Mean	18000	15000	12000
Free Tag %CV	6.00%	3.00%	0.00%
Read Buffer T (1x) Mean	300	100	25
Read Buffer T (1X) SD	40	25	0
Dark Signal Mean	16	0	-16
Dark Noise (SD)	40	25	0

VII

Performance Check Table

performance check table

Operator:		Date:	
	Description	Lot #	Expiration Date
	Read Buffer T (1X)		
	Free Tag		
	Plate #1 Barcode		
	Plate #2 Barcode		
	Plate #3 Barcode		
Incubation Time for Plate # 1			
Pipette ID:		Calibration Date:	

TEST DATA

Description	Mean Signal	Standard Deviation (SD)	% Coefficient Variation (CV)
Free Tag			
Read Buffer			NA
Dark Noise			NA

VIII

Troubleshooting

troubleshooting

If the Performance Qualification test does not meet specifications, repeat the PQ test after confirming that the following details are true:

1. The correct plate type (STANDARD plate) was used.
2. Plates were not reused.
3. The proper storage of reagents was followed. *Do not leave Free Tag and Read buffer bottle open for an extended period of time. Evaporation will alter the concentration of these reagents.*
4. The expiration date of all reagents was checked.
5. The correct protocol was followed. *The incubation time of Free Tag should be between 10 to 20 minutes. The volume of reagent per well should be 150 μ L. Avoid bubbles when pipetting into the wells.*
6. The correct Read Buffer was used for the Background Plate Test.

If the specifications are not met upon PQ repeat, please contact Scientificsupport@mesoscale.com