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Preparation, Separation,
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Scepter™ 3.0 cell counter

Smarter, handheld cell counting

The Scepter™ 3.0 cell counter provides the unparalleled precision of Coulter impedance counting in a convenient, handheld format. Our newest version of the popular Scepter™ cell counter has been updated with features that make it more convenient, easy-to-use, and accurate than ever before.

Counter Intelligence

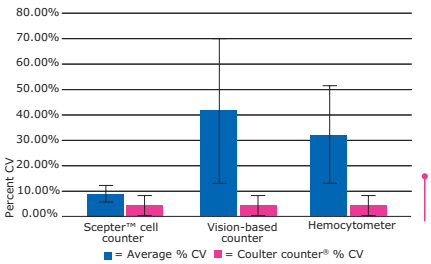
The smartest version yet of our handheld cell counter, the Scepter™ 3.0 instrument:

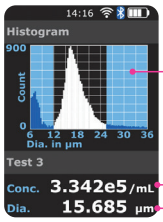
- Uses the Coulter impedance method which avoids common artifacts arising from image-based cell counting methods
- Does not rely on user technique or manual calculation for accuracy
- Counts thousands of cells per measurement for maximum precision
- Has a uniquely ergonomic design, convenient for measurements and storage at the tissue culture hood
- Returns precision counts in <30 seconds
- Requires no sample prep, dedicated reagents, or hazardous dyes
- Can be used to monitor cell health between measurements, passages and batches using size and morphology
- Requires no cleaning protocol to maintain operation

1. Easy-to-read cell count histogram display
2. Mounts anywhere for storage and charging
3. Ergonomic design for sustained, fatigue-free use
4. Wireless capability for instant printing or transfer of count data

Coulter counter precision, in your hand

The Scepter™ sensors use precision microfluidics to measure the electrical impedance of individual cells. This technology gives on-demand outputs of cell volume, cell diameter and cell concentration—all within the cell culture hood.





Histogram displayed as function of cell diameter or cell volume

Cell concentration (cells/mL)

Average cell diameter (µm)

	Format	Counting methods	Sample volume needed	Sample volume counted	Cells counted in a 100,000 cell/mL sample	Average % CV
Hemocytometer	Slide and microscope	Manual, vision-based	10 µL	0.1 µL / square	10/square	41.8
Brand L	Benchtop	Automated vision-based system	10 µL	0.4 µL	40	32.1
Scepter™ Cell Counter	Handheld	Impedance-based cell detection	100 µL	50 µL	5000	9.1

The average percent coefficient of variation (CV) with standard deviation for each counting method shown was calculated from cell concentration measurements of 19 different cell line_samples at 50,000 cells/mL.

Product and ordering information

Description	Qty	Cat. No.
Scepter™ 3.0 Handheld Automated Cell Counter		
Kit with 40 µm Scepter™ 3.0 Sensors (50 Pack)	1	**PHCC340KIT**
Kit with 60 µm Scepter™ 3.0 Sensors (50 Pack)	1	**PHCC360KIT**
Each Kit Includes:		
Scepter™ 3.0 Handheld Automated Cell Counter		
Scepter™ 3.0 Cell Counter Sensors (50 Pack)		
Scepter™ 3.0 Charger Station and Mounting Kit		
Scepter™ 3.0 Test Bead Vial		
Quick start Guide and Safety information		
Cell Counter Sensors & Accessories		
Scepter™ 3.0 Cell Counter Sensors only, 40 µm	50	**PHCC340050**
	250	**PHCC340250**
Scepter™ 3.0 Cell Counter Sensors only, 60 µm	50	**PHCC360050**
	250	**PHCC360250**
Scepter™ 3.0 Test Bead Vial only, 5 mL	1	**PHCC3BEADS**
Scepter™ 3.0 Charger Station only	1	**PHCC3CHARG**
Scepter™ 3.0 Charger Mounting Kit only	1	**PHCC3WKIT**

Validated performance across a wide range of cells and conditions

Sample input concentrations and recommended sensors for expected cell diameter:

Sensor size	Operating Range	Sensor Scale Diameter (µm)	Working Diameter Range (µm)
40 µm	50,000-1,500,000 cells/mL	4-20	5-15
60 µm	10,000-500,000 cells/mL	6-36	8-25

Cell phenotypes validated using the Scepter™ counting technology:

Cell Type	Measured size (µm)	40 µm sensor	60 µm sensor
2102 Ep	15-19		•
454 beads			•
A172	15		•
A253	14-18		•
A375	16		•
A431	15-17		•
A549			•
Algae (various)	7-9	•	
B35	13-16	•	•
B Cells	6-11	•	
C2C12	12	•	•
C305	12-14	•	•
C6	12-13		•
CA46	10-12	•	•
Caco-2	17		•
CHO	14-17		•
COS-1	12	•	•
Cos-7	15		•
D283	12	•	
Daudi	10-12	•	•
DU-145	15-17		•
Epithelia	14-15		•
HCT-116	10	•	•
HEK293	11-15		•
HeLa	12-14		•

Validated cell phenotypes continued:

Cell Type	Measured size (µm)	40 µm sensor	60 µm sensor
HepG2	12		•
HFF	18-20		•
Hs27	14	•	•
HT-1080	14-16		•
HT-29	11		•
HUH7- Hepatoma line			•
Human ES Cells	9-12	•	
HUVEC	14-15		•
IMR-32	12-14	•	•
IMR-90	15	•	•
Jurkat	13		•
K562	22		•
KB	14		•
KG-1	10-13	•	•
L6	14-16		•
LNCaP	15-16		•
Luminex® beads	5-6	•	
MCF7	15-17		•
MDCK	13-15		•
Meg-01	16-17		•
MG-63	15-17		•
Mouse ES Cell	5-13	•	•
Mesenchymal Stem Cell	15-16		•
MRC-5			•
NCI-H146	10-13	•	
NIH 3T3	15		•
NTERA2, clone D1	13	•	•
OK	17-18		•
PBMCs	7-12	•	
PC12	9-13		•
Primary Astrocytes	7	•	
Primary Neuronal Cell		•	
Raji	12-15	•	•
Ramos	11-12	•	•
Rat Dorsal Root Ganglion Cells	7	•	
Rat Whole Blood	4.6	•	
Red Blood Cells	5-7	•	
Rat Neural Stem Cell	11-13		•
RAW 264.7	12-15		•
RBL	11-13	•	•
RIN-mF5	13-14		•
SF9	13		•
SH-SY5Y	12		•
Sk-Br-3	15-20		•
SK-MEL-28	17-19		•
SK-N-MC	14-15		•
SK-N-SH	14-15		•
Splenocytes	7-9	•	
SW-480	15		•
SW-620	13-14	•	•
T84	14-18		•
T98G	17		•
TF-1	13-14	•	•
U251	16-20		•
U2OS	16-19		•
U266	12		•
U87-Human Glioblastoma cell line	12-14		•
U937	11-13	•	•
WI-38	12-15		•
Y79	13-14		•
Yeast- *Pichia Pastoris*	5	•	
Yeast- *S.cerevisiae*	6	•	

• Recommended based on size • Customer Validated • Merck Validated

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