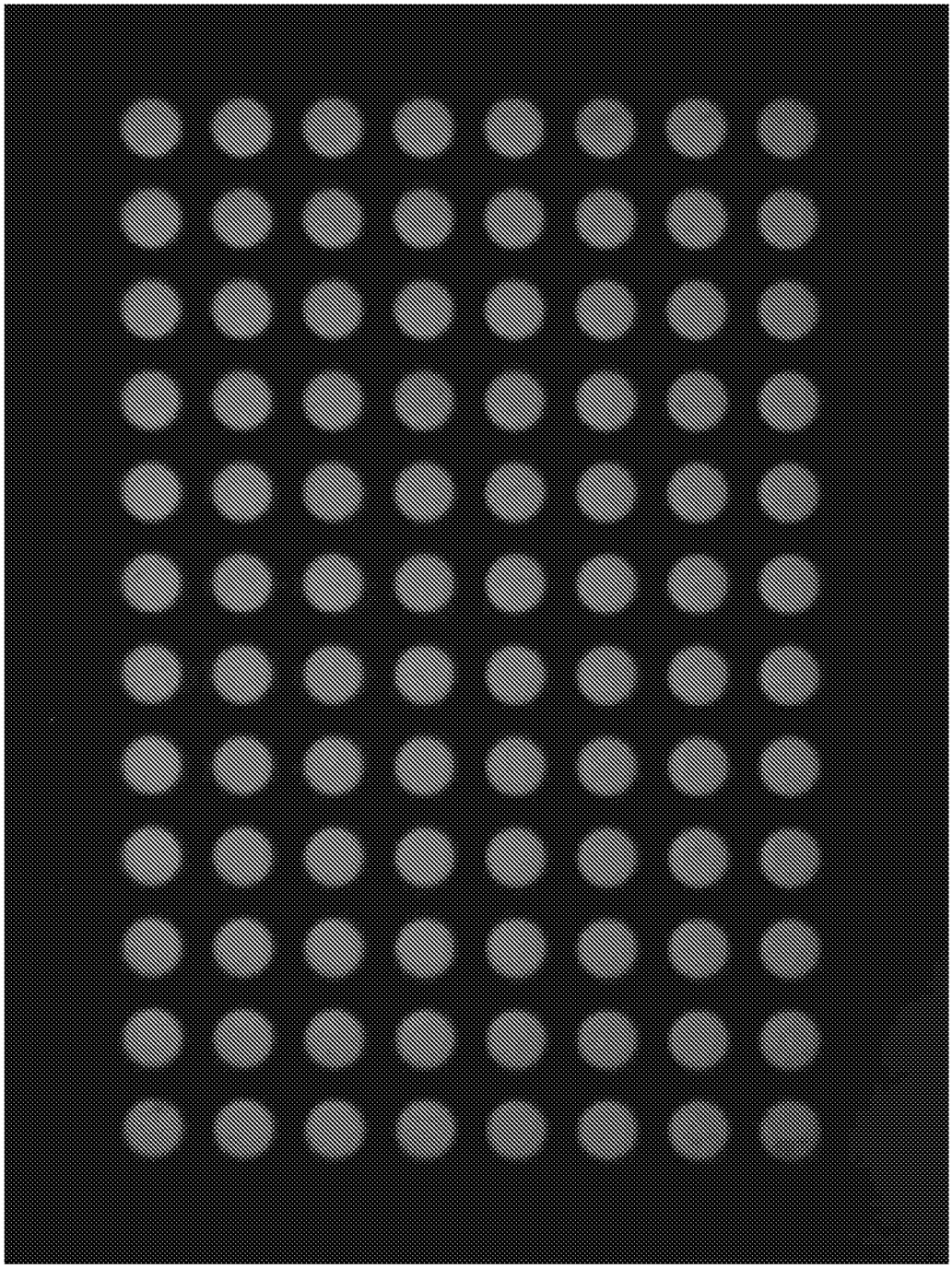

FIG. 1

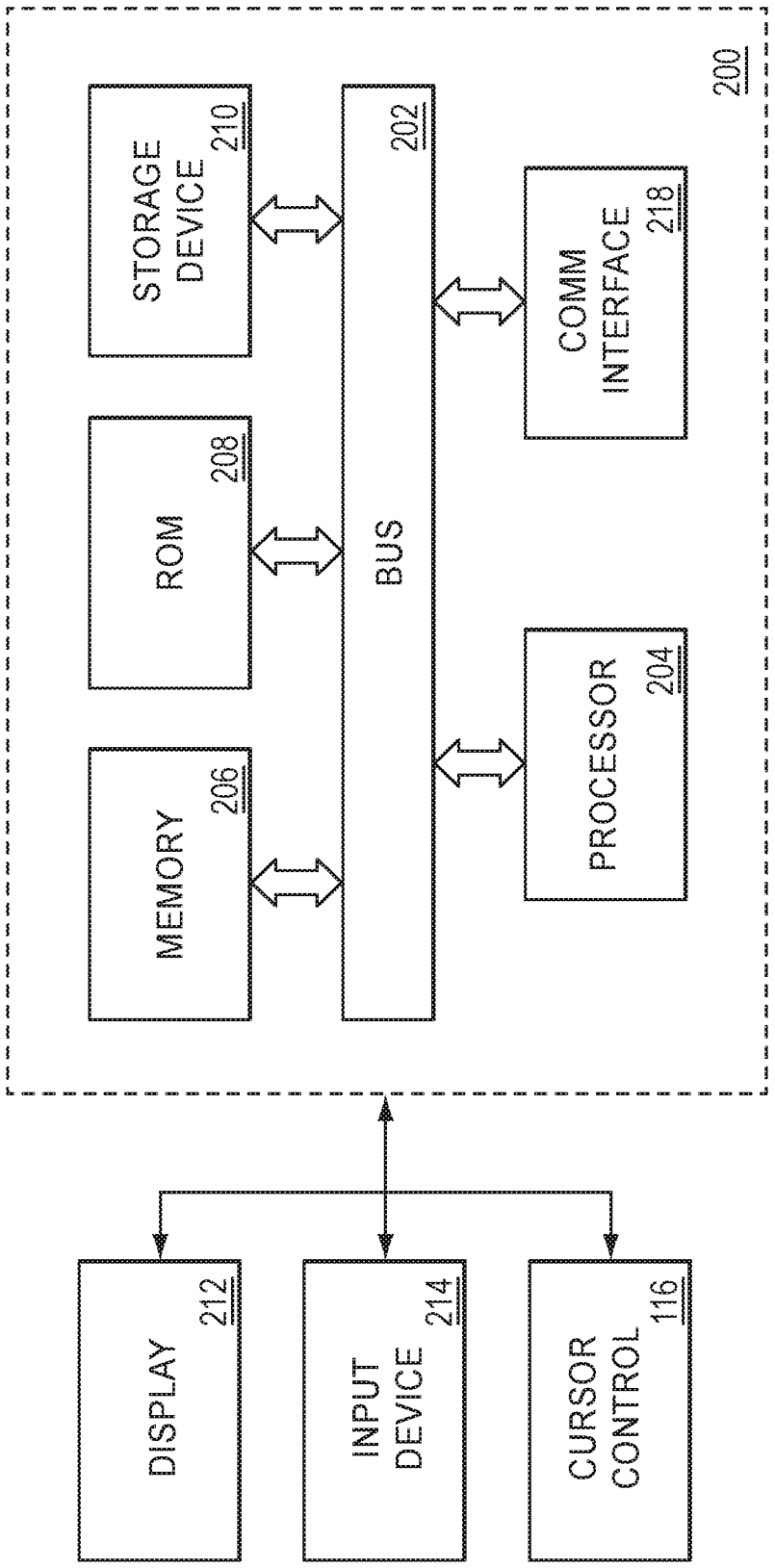
200
STORAGE DEVICE
210
202
COMM INTERFACE
218
ROM
208
BUS
MEMORY
206
PROCESSOR
204
DISPLAY
212
INPUT DEVICE
214
CURSOR CONTROL
116

FIG. 2

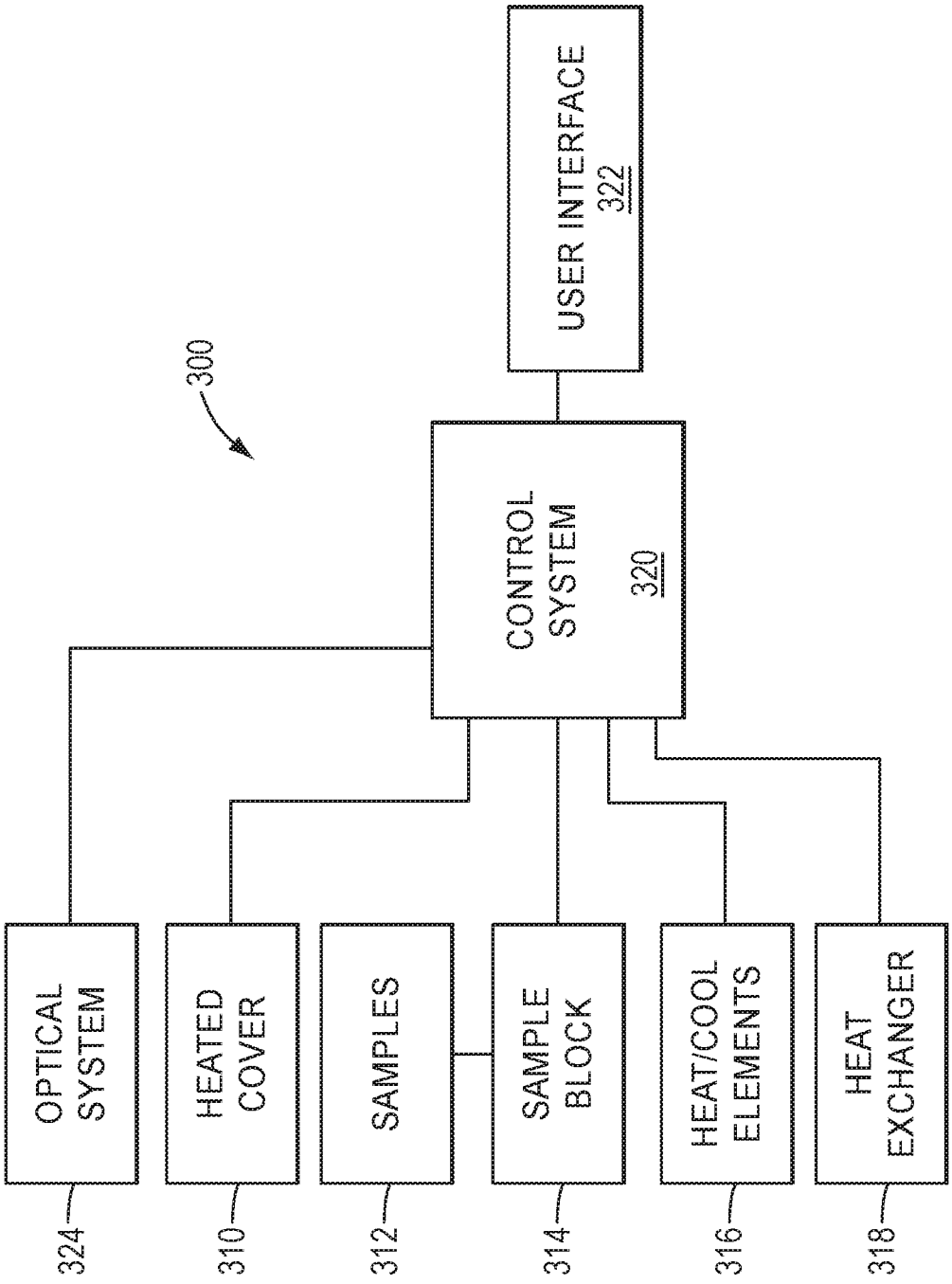
300
USER INTERFACE
322
CONTROL SYSTEM
320
OPTICAL SYSTEM
HEATED COVER
SAMPLES
SAMPLE BLOCK
HEAT/COOL ELEMENTS
HEAT EXCHANGER
324
310
312
314
316
318

FIG. 3

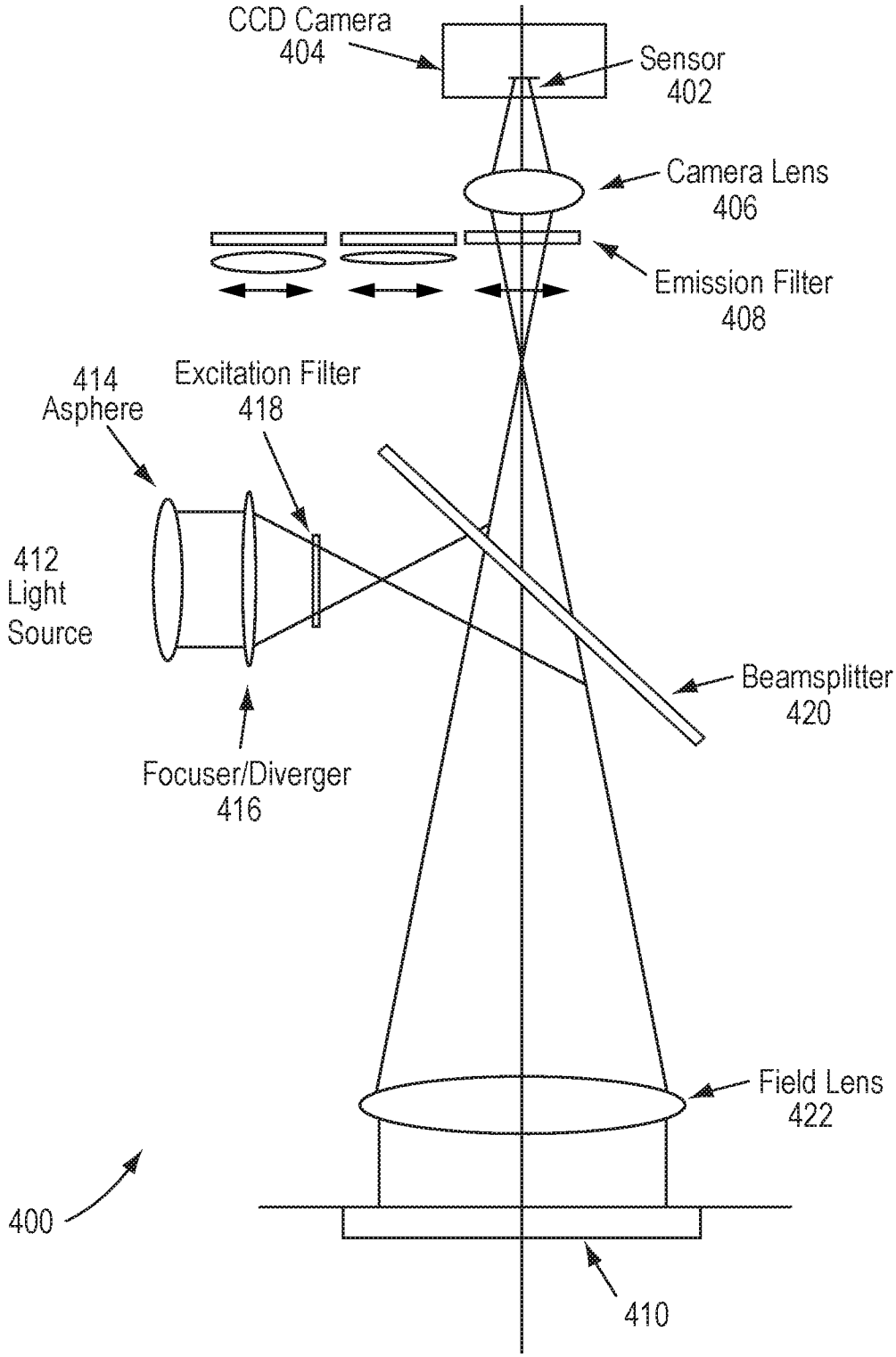
CCD Camera
404
Sensor
402
Camera Lens
406
Emission Filter
408
414
Asphere
Excitation Filter
418
412
Light
Source
Beamsplitter
420
Focuser/Diverger
416
Field Lens
422
400
410

FIG. 4

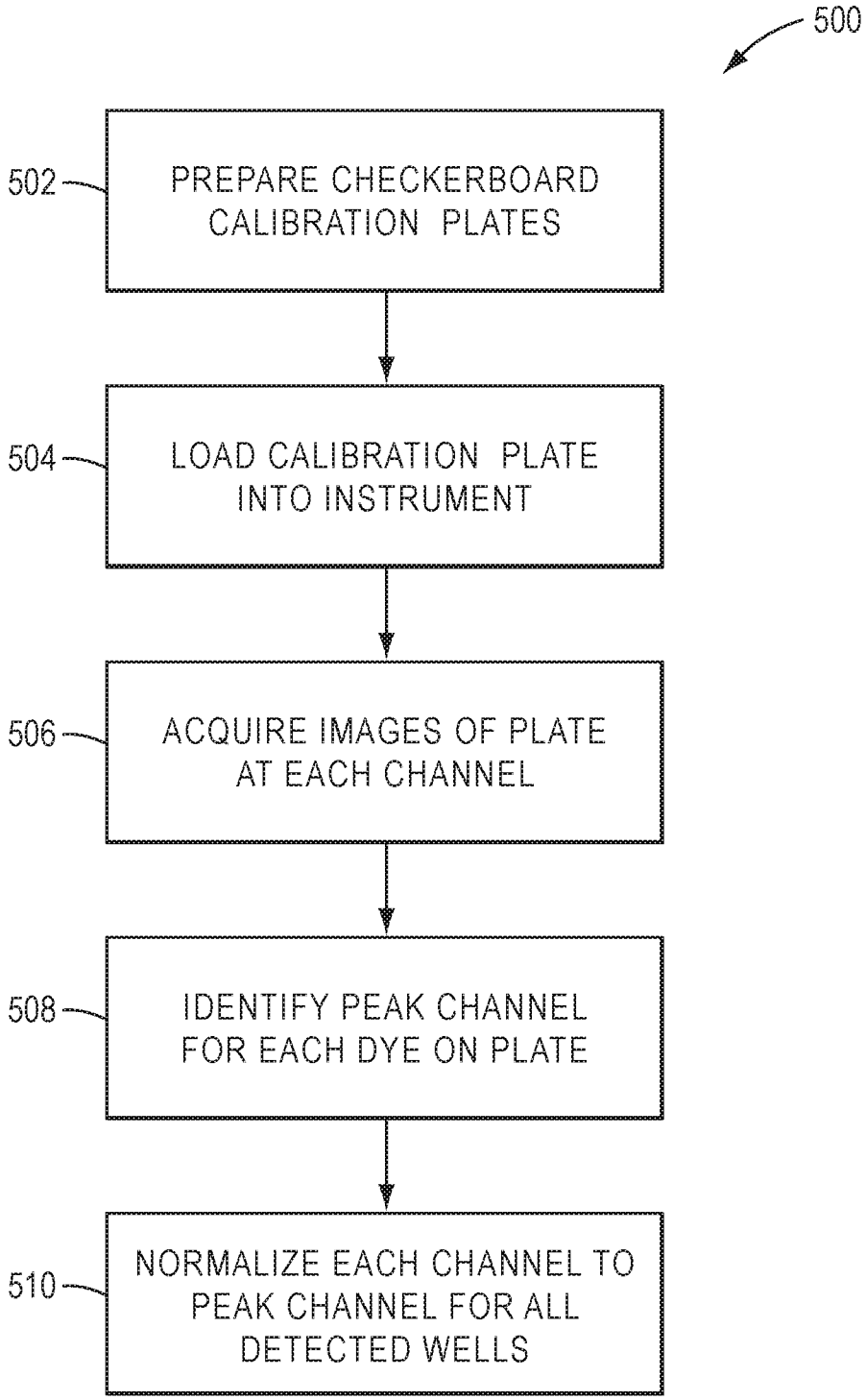
500
502
PREPARE CHECKERBOARD CALIBRATION PLATES
504
LOAD CALIBRATION PLATE INTO INSTRUMENT
506
ACQUIRE IMAGES OF PLATE AT EACH CHANNEL
508
IDENTIFY PEAK CHANNEL FOR EACH DYE ON PLATE
510
NORMALIZE EACH CHANNEL TO PEAK CHANNEL FOR ALL DETECTED WELLS

FIG. 5

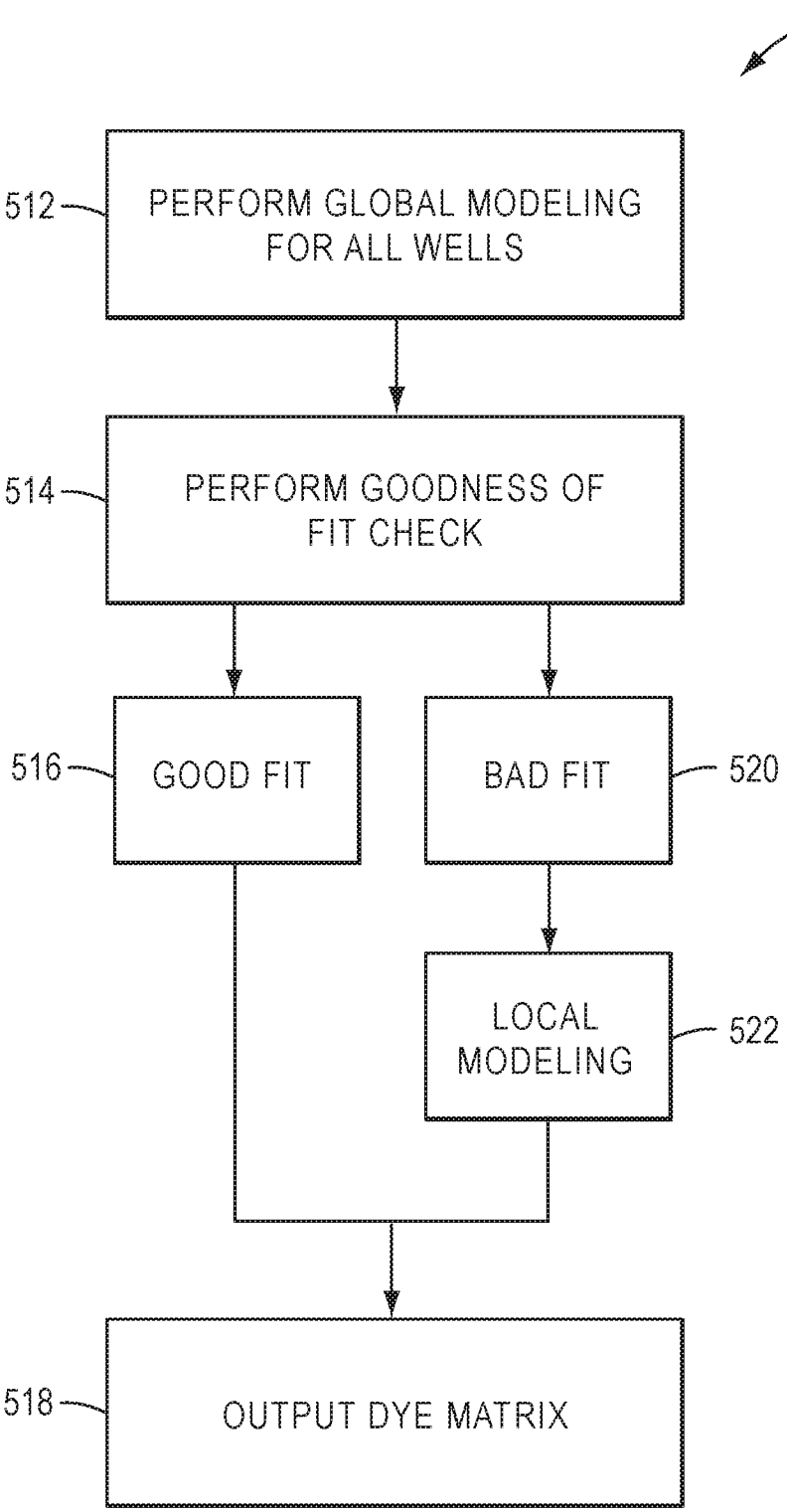
500
512
PERFORM GLOBAL MODELING FOR ALL WELLS
514
PERFORM GOODNESS OF FIT CHECK
516
GOOD FIT
BAD FIT
520
LOCAL MODELING
522
518
OUTPUT DYE MATRIX

FIG. 6

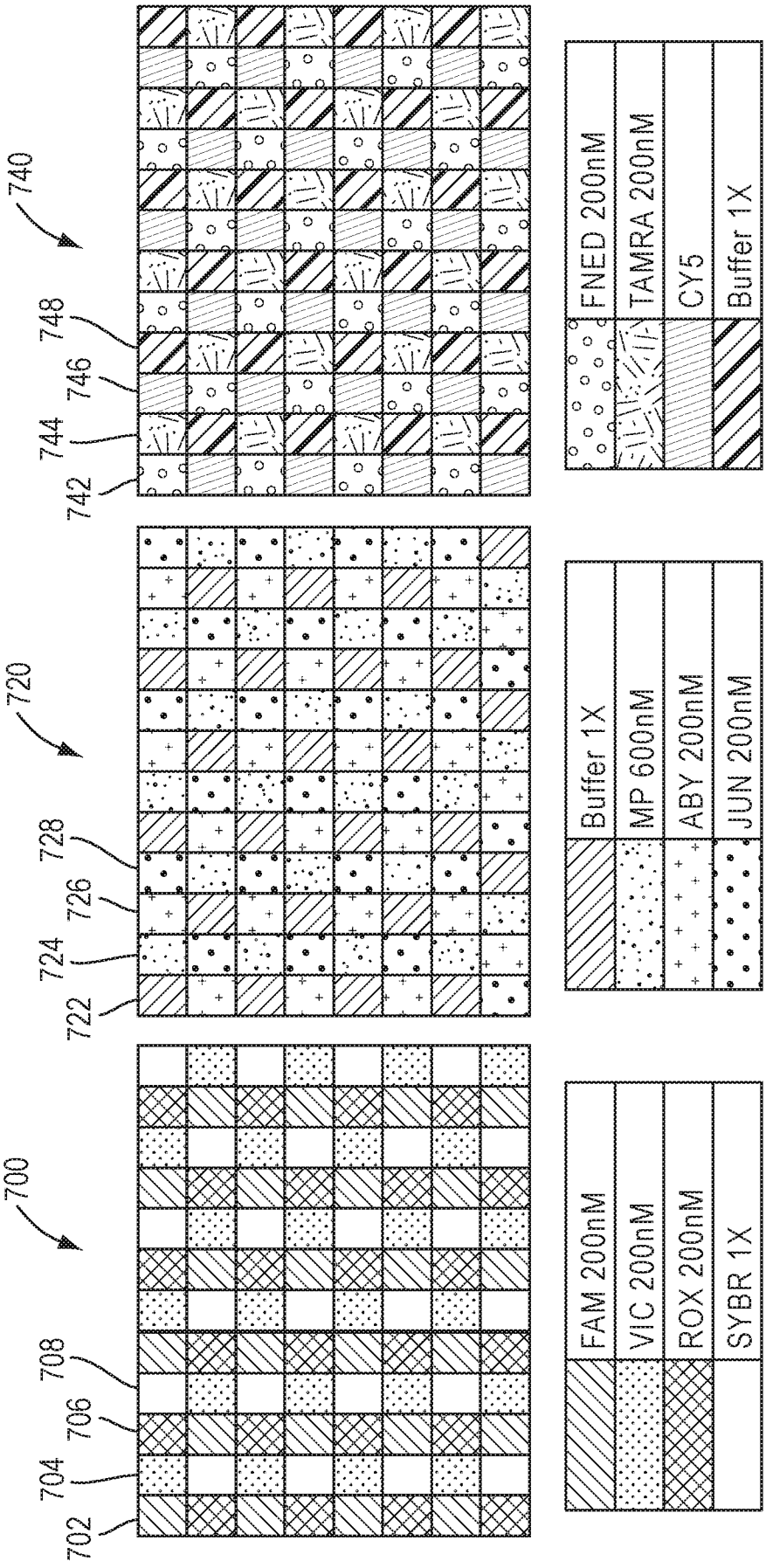
700
702
704
706
708
FAM 200nM
VIC 200nM
ROX 200nM
SYBR 1X
720
722
724
726
728
Buffer 1X
MP 600nM
ABY 200nM
JUN 200nM
740
742
744
746
748
FNED 200nM
TAMRA 200nM
CY5
Buffer 1X

FIG. 7A

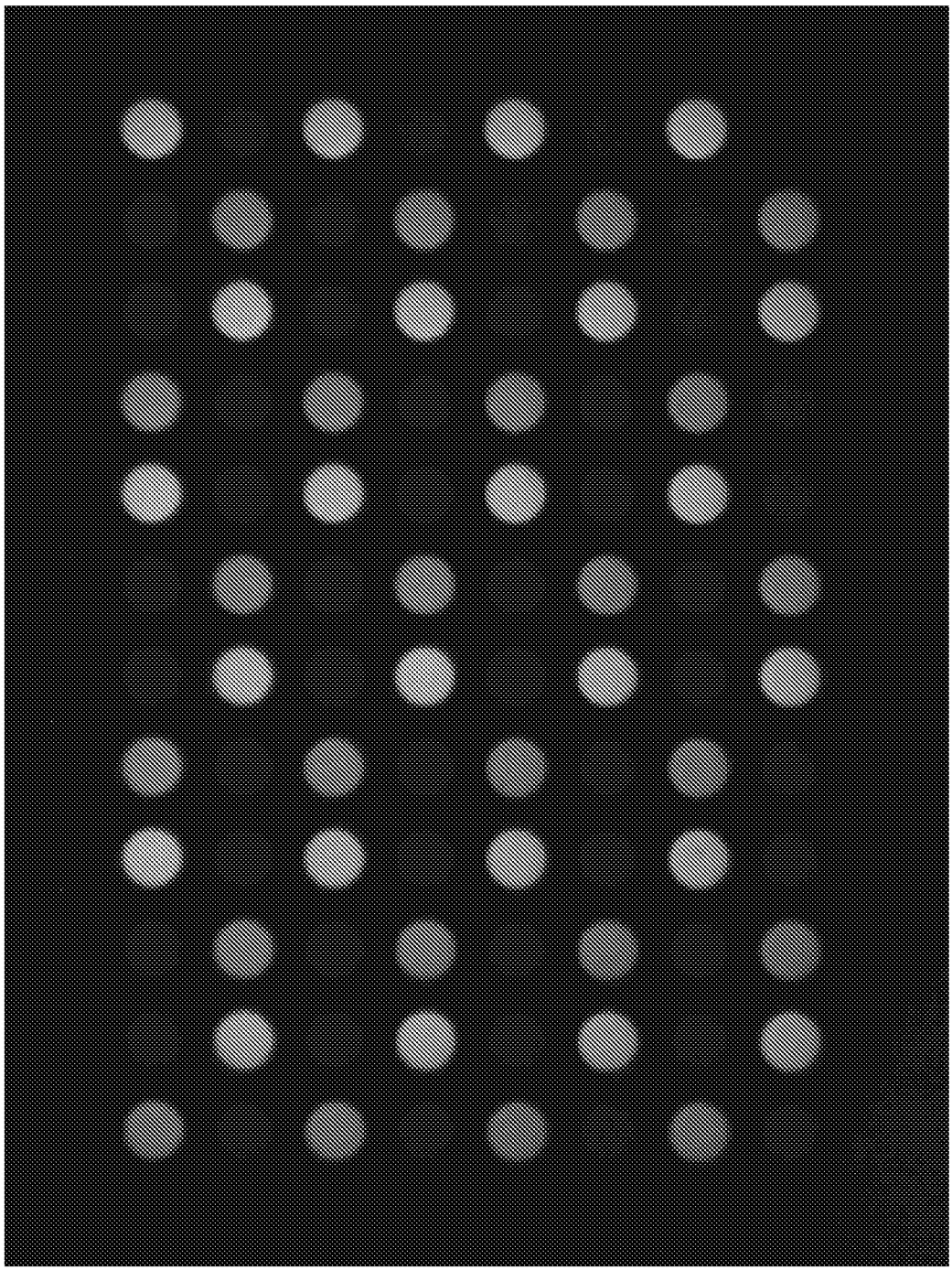

FIG. 7B

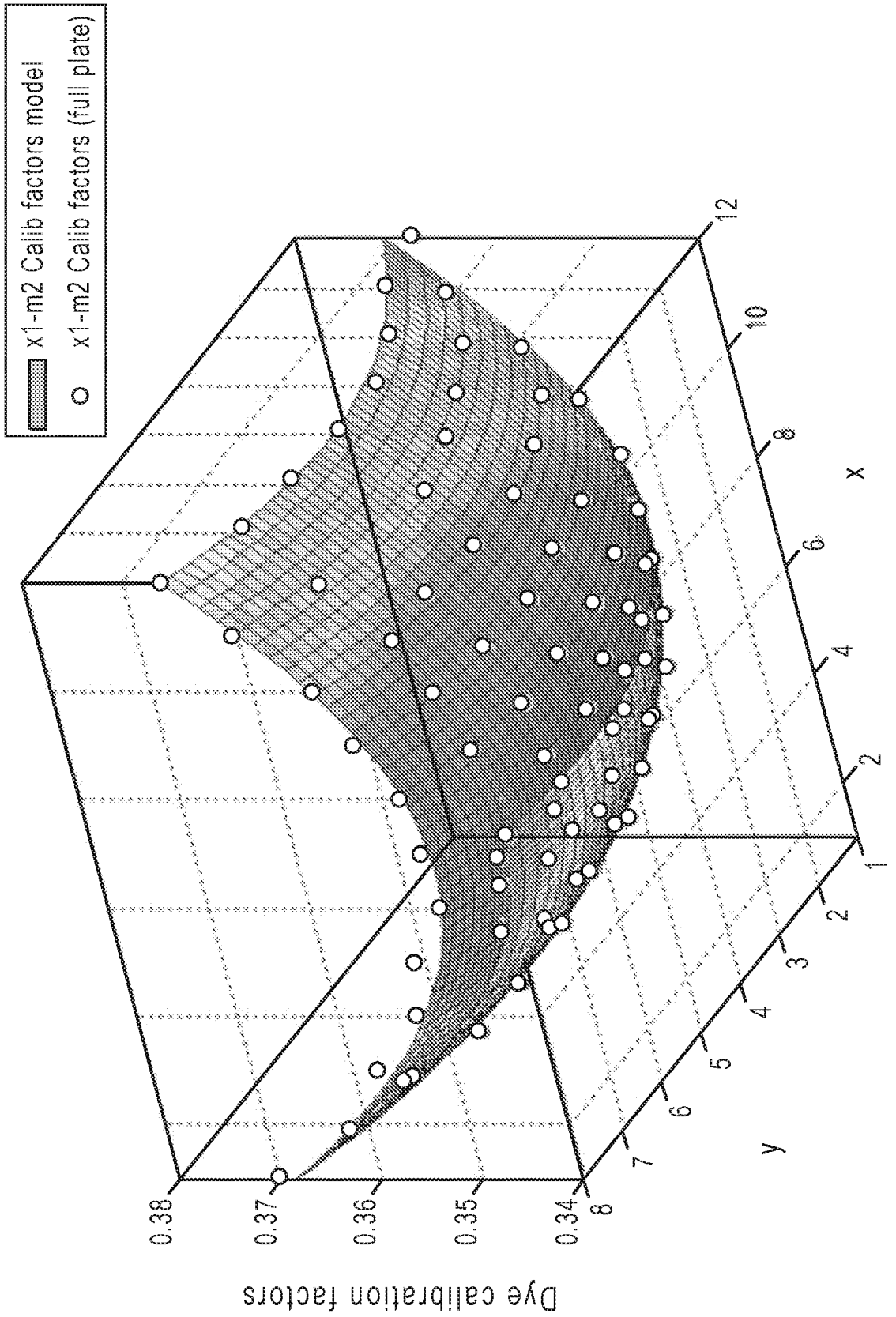
x1-m2 Calib factors model
x1-m2 Calib factors (full plate)
Dye calibration factors
0.38
0.37
0.36
0.35
0.34
y
8
7
6
5
4
3
2
1
x
2
4
6
8
10
12

FIG. 8

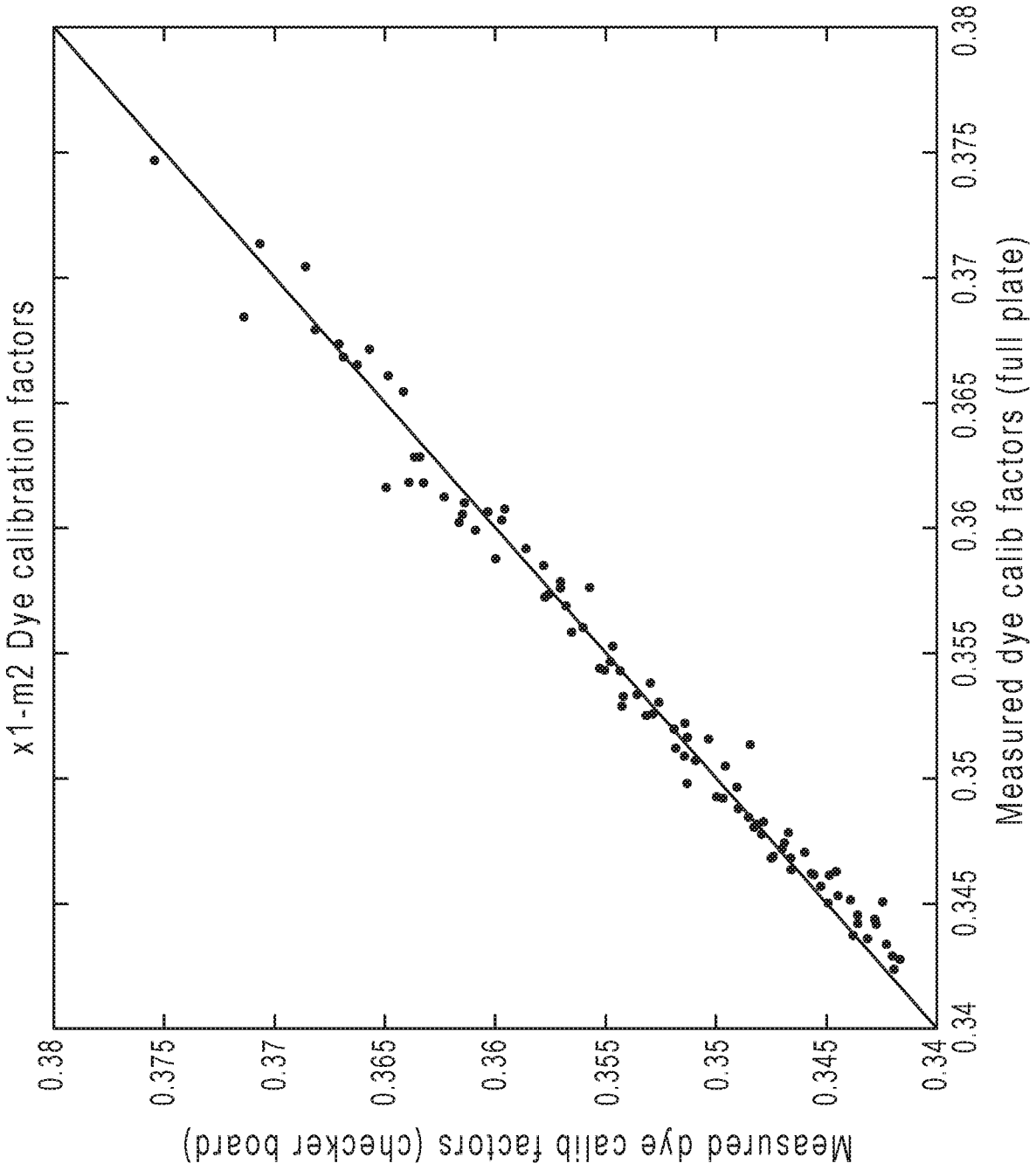
x1-m2 Dye calibration factors
Measured dye calib factors (checker board)
Measured dye calib factors (full plate)
0.38
0.375
0.37
0.365
0.36
0.355
0.35
0.345
0.34

FIG. 9

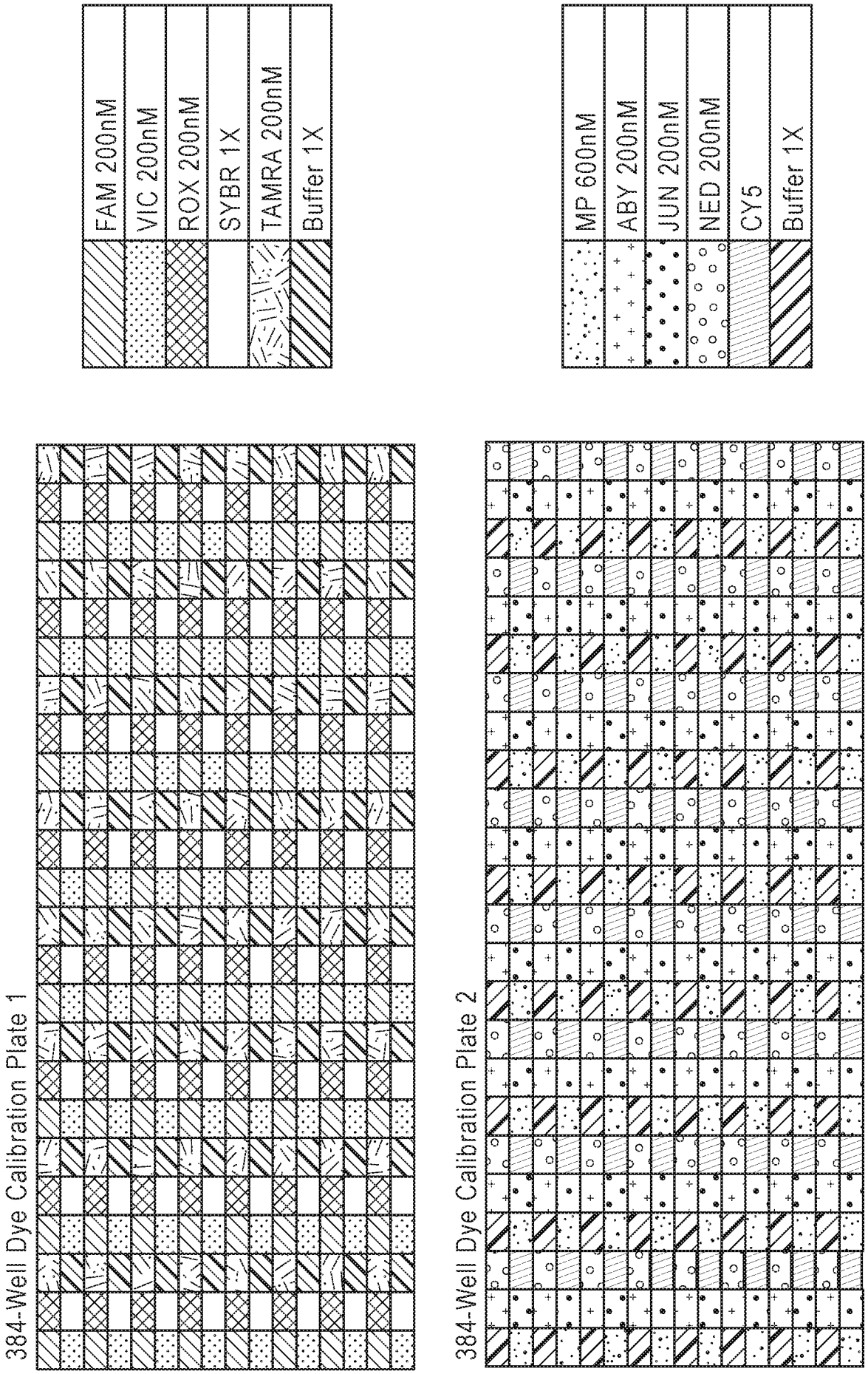
FAM 200nM
VIC 200nM
ROX 200nM
SYBR 1X
TAMRA 200nM
Buffer 1X
MP 600nM
ABY 200nM
JUN 200nM
NED 200nM
CY5
Buffer 1X
384-Well Dye Calibration Plate 1
384-Well Dye Calibration Plate 2

FIG. 10