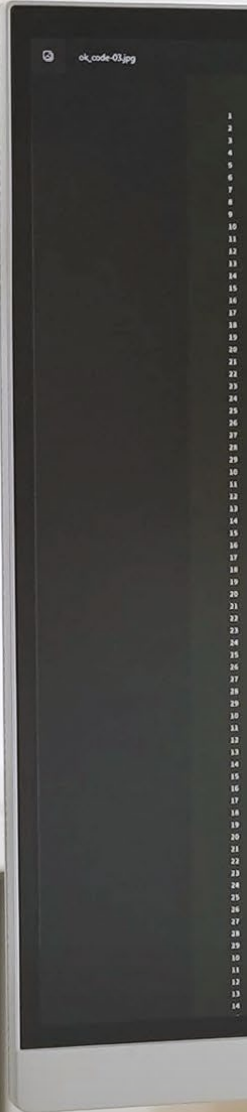




```

23
24
25 <link rel="preconnect" href="//s3.mysite.com" />
26 <link rel="preconnect" href="//www.mysite.com" />
27
28 <meta name="viewport" content="width=640, initial-scale=1">
29
30 <script>
31 var mytag = mytag || {};
32 mytag.cmd = mytag.cmd || [];
33 (function() {
34   var gads = document.createElement('script');
35   gads.async = true;
36   gads.type = 'text/javascript';
37   var useSSL = 'https:' == document.location.protocol;
38   gads.src = (useSSL ? 'https:' : 'http:') + '//www.mytag.services.com/tag/js/gpt.js';
39   var node = document.getElementsByTagName('script')[0];
40   node.parentNode.insertBefore(gads, node);
41   });
42 mytag.cmd.push(function() {
43   var homepageSquareSizeMapping = mytag.sizeMapping();
44   addSize([945, 250], [200, 200]);
45   addSize([0, 0], [300, 250]);
46   build();
47   mytag.defineSlot('/1023782/homepageDynamicSquare', [[300, 250], [200, 200]], 'reserved-div.1');
48 </script>
49 <link rel="preconnect" href="//s3.mysite.com" />
50 <link rel="preconnect" href="//www.mysite.com" />
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

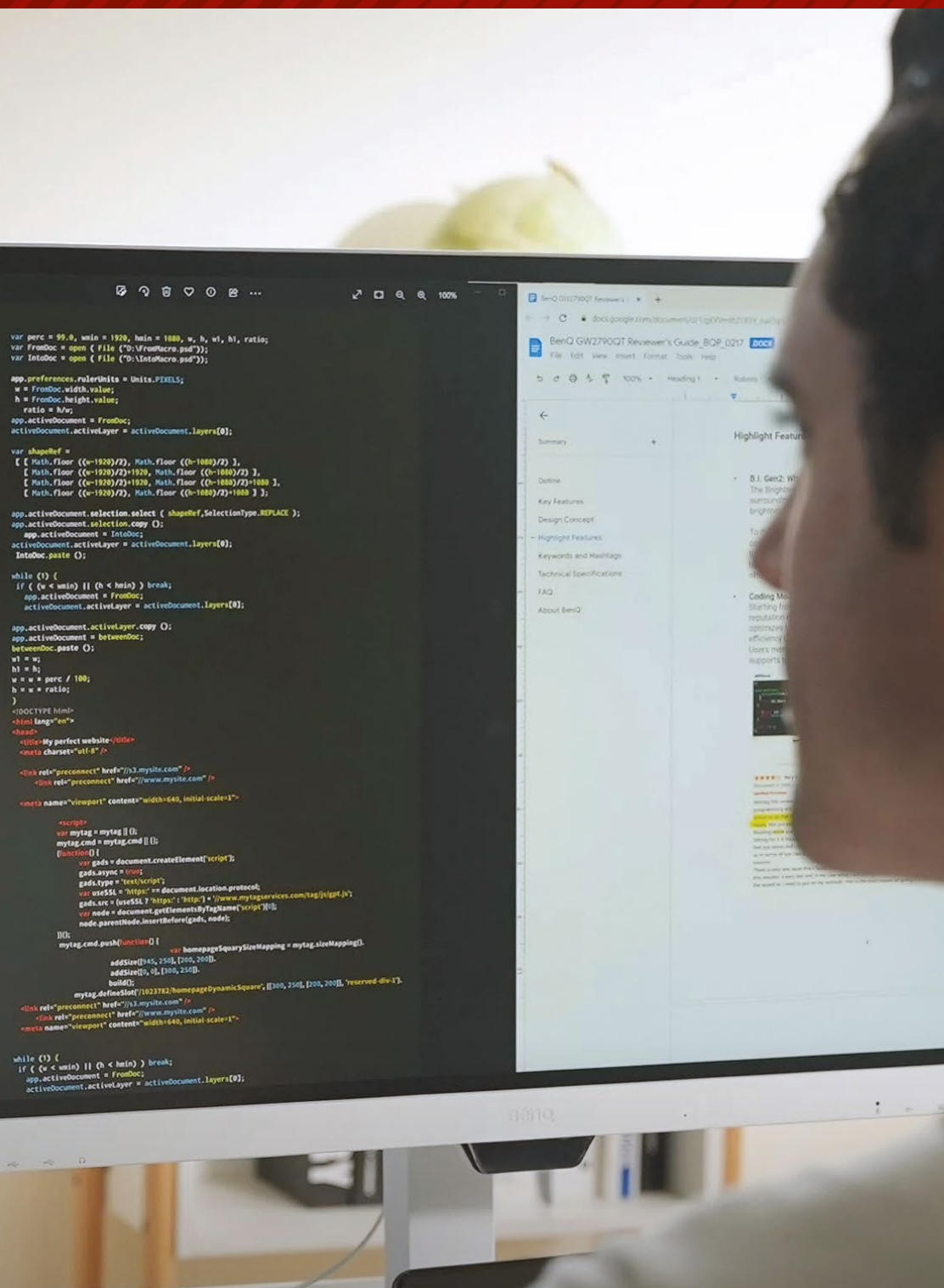
```



BRILLIANT MONITORS

from £149

Whether you're looking for screens to roll out in a business, an entertainment centrepiece or a pro-quality monitor, one of our 15 displays holds the answer



It's tempting to say that monitors come in all shapes and sizes, but that isn't quite true. You've probably already noticed that they tend to be rectangular. But the sizes generalisation does hold, which is why we had to lay down some ground rules for this test: a minimum size of 27in, a maximum of 34in. We've covered larger monitors in *PC Pro* recently, and will continue to do so, but we wanted to stay focused on the mainstream in this month's Labs.

That means we also steer clear of gaming monitors; we're quite happy to let others worry about ridiculous response times and refresh rates. And RGB. And headphone stands. As you'll see, however, a few monitors on test would make excellent companions during the working day before transforming

themselves into entertainment centres at night – the Samsung ViewFinity S9 in particular.

There are also a couple of monitors here with professional aspirations, including the BenQ PD2706U. While it can't match the Eizo ColorEdge CG2700X for its colour-switching skills or its built-in hardware calibration, it does have the advantage of being a sixth of its rival's price. Mind you, the only thing that the exceptional CG2700X can't do is display in 3D, as we discuss on p92.

Despite our attempts to make this a focused Labs, you'll find a huge amount of choice in terms of features, price and colour reproduction. Hopefully, our feature table, buyer's guide and comprehensive reviews will reveal which is perfect for your needs.

CONTRIBUTOR: Tim Danton

CONTENTS

27IN MONITORS	
Acer Vero CB272K bmiiprx	84
Acer Vero B277 Ebmiprxv	84
AOC 27B3CA2	85
BenQ BL2790QT	85
BenQ PD2706U	86
Iiyama ProLite XUB2763HSU-B1	86
NEC MultiSync E274FL	87
ViewSonic VG2756V-2K	87
32/34IN MONITORS	
AOC CU34P3CV	88
Iiyama ProLite XUB3293UHSN-B5	88
Philips 34B1U5600CH	89
ViewSonic VG3456C	89
PRO & ENTERTAINMENT	
Eizo ColorEdge CG2700X	90
Eizo FlexScan EV3240X	91
Samsung ViewFinity S9 (S27C90)	93
Feature table	80
What to look for when buying a monitor	82
3D monitors on the rise	92
How we test	94
Graphs	94
View from the Labs	95



	RECOMMENDED			RECOMMENDED	RECOMMENDED	RECOMMENDED	RECOMMENDED
	Acer Vero B277 Ebmiprxv	Acer Vero CB272K bmiiprx	AOC 27B3CA2	AOC CU34P3CV	BenQ BL2790QT	BenQ PD2706U	Eizo ColorEdge CG2700X
Overall rating	★★★★★	★★★★☆	★★★★☆	★★★★★	★★★★★	★★★★★	★★★★★
Buying information							
Price	£124 (£149 inc VAT)	£224 (£269 inc VAT)	£125 (£150 inc VAT)	£317 (£380 inc VAT)	£225 (£270 inc VAT)	£333 (£399 inc VAT)	£2,149 (£2,579 inc VAT)
Supplier	currys.co.uk	currys.co.uk	amazon.co.uk	amazon.co.uk	laptopsdirect.co.uk	scan.co.uk	wexphotovideo.com
Part code	UM.HB7EE.E13	UM.HB2EE.039	27B3CA2	CU34P3CV	9H.LLLA.TPE	9H.LLJLB.QBE	CG2700X-BK
Service & support							
Warranty	3yr limited	3yr limited	3yr RTB	3yr RTB	3yr on-site swapout	3yr C&R	5yr on-site swapout
Manufacturer's reliability ¹	92%	92%	92%	92%	96%	96%	N/A
Overall brand satisfaction ¹	91%	91%	91%	91%	93%	93%	N/A
EPEAT rating	Silver	Silver	Not yet rated	Silver	Bronze	✗	✗
Display							
Panel size	27in	27in	27in	34in	27in	27in	27in
Resolution	1,920 x 1,080	3,840 x 2,160	1,920 x 1,080	3,440 x 1,440	2,560 x 1,440	3,840 x 2,160	3,840 x 2,160
Aspect ratio	16:9	16:9	16:9	21:9 (approx)	16:9	16:9	16:9
Pixel density	81ppi	163ppi	81ppi	110ppi	109ppi	163ppi	163ppi
Panel type	IPS	IPS	IPS	VA	IPS	IPS	IPS
Curvature	✗	✗	✗	1500R	✗	✗	✗
Backlight	W-LED	W-LED	W-LED	W-LED	W-LED	W-LED	W-LED
Key specifications							
Peak brightness (stated)	250cd/m ²	350cd/m ²	250cd/m ² (stated)	300cd/m ²	350cd/m ²	350cd/m ²	500cd/m ²
Static contrast ratio (stated)	1,000:1	1,000:1	1,300:1	3,000:1	1,000:1	1,200:1	1,450:1
Display colours	16.8 million	1.07 billion	16.8 million	16.8 million	16.8 million	1.07 billion	1.07 billion
Colour depth	6-bit + FRC	8-bit + FRC	6-bit + FRC	8-bit	6-bit + FRC	8-bit + FRC	10-bit
HDR claim/certification	✗	HDR10	✗	✗	✗	DisplayHDR 400	✗
Maximum frequency (vertical)	100Hz	60Hz	100Hz	100Hz	60Hz	60Hz	60Hz
Claimed response time (G2G)	4ms	4ms	4ms	4ms	5ms	5ms	13ms
AMD/Nvidia adaptive sync?	AMD FreeSync	AMD FreeSync	Adaptive sync mode	✗	✗	✗	✗
Video inputs							
DisplayPort (version)	1 (1.2)	1 (1.2)	✗	1 (1.4)	1 (1.2)	1 (1.4)	1 (1.2)
HDMI (version)	1 (1.4)	2 (2.0)	1 (1.4)	1 (2.0)	1 (1.4)	1 (2.0)	1 (2.0)
USB-C (power rating)	✗	✗	1 (65W)	1 (65W)	1 (65W)	1 (90W)	1 (92W)
Other	VGA	✗	✗	✗	DisplayPort out	✗	✗
Ports & docking							
RJ45	✗	✗	✗	✓	✗	✗	✓
USB-C (power rating)	✗	✗	✗	✗	✓ (7.5W)	✓ (power not stated)	✗
USB-B	✓	✗	✗	✓	✗	✓	✓
USB-A hub	2 x USB-A 3.2 Gen 1 (5Gbits/sec)	✗	2 x USB-A 3.2 Gen 1 (5Gbits/sec)	4 x USB-A 3.2 Gen 1 (5Gbits/sec)	3 x USB-A 3.2 Gen 1 (5Gbits/sec)	3 x USB-A 3.2 Gen 1 (5Gbits/sec)	2 x USB-A 3.2 Gen 1 (5Gbits/sec), 2 x USB-A 2
Headphones socket	✓	✓	✓	✓	✓	✓	✗
Other	3.5mm input	✗	✗	✗	3.5mm input, microphone	✗	✗
Stand features							
Adjustable height	150mm	165mm	✗	150mm	110mm	150mm	155mm
Portrait mode	✓	✓	✗	✗	✓	✓	✓
Tilt angle (forward/back)	5°/35°	5°/35°	5°/23°	5°/23°	5°/20°	5°/30°	5°/35°
Swivel angle (left/right)	45°/45°	178°/178°	✗	175°/175°	20°/20°	20°/20°	172°/172°
Other features							
Webcam	✗	✗	✗	✗	✗	✗	✗
KVM	✗	✗	✗	✓	✗	✓	✓
VESA mount	✓	✓	✓	✓	✓	✓	✓
Integrated power supply	✓	✓	✓	✓	✓	✓	✓
Speakers	2 x 2W	2 x 2W	2 x 2W	2 x 5W	2 x 2W	2 x 2.5W	✗
Cables supplied ²	DP, HDMI, USB-B	HDMI	HDMI, USB-C	DP, HDMI, USB-C, USB-C to A	HDMI	DP, HDMI, USB-C	HDMI, USB-C
Other	✗	✗	✗	✗	✗	Hotkey Puck G2	Self-calibration sensor, hood
Size & weight							
Dimensions (WDH) ³	613 x 260 x 371-521mm	614 x 270 x 390-555mm	619 x 225 x 444mm	808 x 275 x 482-633mm	614 x 239 x 424-534mm	614 x 257 x 495-645mm	638 x 245 x 416-671mm
Weight with stand	8.1kg	8.3kg	4.4kg	10kg	8.4kg	10kg	9.7kg

¹ Monitor reliability rating in reader-voted PC Pro Excellence Awards 2023 (see issue 351, p35). N/A indicates not enough feedback to give a rating. ² All monitors include power cables. DP = DisplayPort. USB-B denotes a USB-B to USB-A cable. ³ Includes stand at its lowest height for monitors with height adjustment. *Also supports Thunderbolt 4.



LABS WINNER		RECOMMENDED	RECOMMENDED				
Eizo FlexScan EV3240X	Iiyama ProLite XUB2763HSU-B1	Iiyama ProLite XUB3293UHSN-B5	NEC MultiSync E274FL	Philips 34B1U5600CH	Samsung ViewFinity S9 (S27C90)	ViewSonic VG2756V-2K	ViewSonic VG3456C
★★★★★	★★★★☆	★★★★★	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
£1,206 (£1,448 inc VAT)	£120 (£144 inc VAT)	£358 (£429 inc VAT)	£191 (£229 inc VAT)	£458 (£550 inc VAT)	£833 (£999 inc VAT)	£333 (£399 inc VAT)	£427 (£512 inc VAT)
photospecialist.co.uk	scan.co.uk	currys.co.uk	senetic.co.uk	amazon.co.uk	samsung.com/uk	uk.insight.com	uk.insight.com
EV3240X-BK	XUB2763HSU-B1	XUB3293UHSN-B5	E274FL-BK	34B1U5600CH/00	LS27C902PAUXU	VG2756V-2K	VG3456C
5yr on-site swapout	3yr on-site swapout	3yr on-site swapout	3yr C&R	3yr RTB	2yr C&R	3yr C&R	3yr C&R
N/A	95%	95%	N/A	94%	89%	92%	92%
N/A	94%	94%	N/A	93%	87%	90%	90%
Gold	Silver	✗	✗	Silver	✗	Silver	Silver
31.5in	27in	31.5in	27in	34in	27in	27in	34in
3,840 x 2,160	1,920 x 1,080	3,840 x 2,160	1,920 x 1,080	3,440 x 1,440	5,120 x 2,880	2,560 x 1,440	3,440 x 1,440
16:9	16:9	16:9	16:9	21:9 (approx)	16:9	16:9	21:9 (approx)
140ppi	81ppi	140ppi	81ppi	110ppi	218ppi	109ppi	109ppi
IPS	IPS	IPS	VA	VA	IPS	IPS	VA
✗	✗	✗	✗	1500R	✗	✗	1500R
W-LED	W-LED	W-LED	W-LED	W-LED	W-LED	W-LED	W-LED
350cd/m ²	250cd/m ²	350cd/m ²	250cd/m ²	350cd/m ²	600cd/m ²	350cd/m ²	400cd/m ²
2,000:1	1,300:1	1,000:1	1,000:1	3,000:1	1,000:1	1,000:1	3,000:1
16.8 million	16.8 million	1.07 billion	16.8 million	16.8 million	1.07 billion	16.8 million	16.8 million
8-bit	8-bit	8-bit + FRC	6-bit + FRC	8-bit	8-bit + FRC	8-bit	6-bit + FRC
✗	✗	✗	✗	✗	✓	✗	✗
60Hz	100Hz	60Hz	60Hz	120Hz	60Hz	60Hz	100Hz
14ms	3ms	4ms	6ms	4ms	5ms	5ms	5ms
✗	AMD FreeSync	✗	✗	✗	✗	✗	✗
1 (1.2)	1 (1.2)	1 (1.2)	1 (1.2)	1 (1.4)	✗	1 (1.2)	1 (1.2)
2 (2.0)	1 (2.0)	1 (2.0)	1 (1.4)	1 (2.0)	✗	1 (1.4)	1 (2.0)
1 (94W)	✗	1 (65W)	1 (60W)	1 (100W)	1* (90W)	1 (90W)	1 (98W)
✗	✗	✗	✗	✗	miniDisplayPort	✗	✗
✓	✗	✓	✓	✓	✗	✓	✓
1 (15W)	✗	✗	✗	2 (1 x data only, 1 x 15W)	3 (4.5W)	✗	✗
✓	✓	✓	✓	✗	✗	✓	✓
3 x USB-A 3.2 Gen 1 (5Gbits/sec)	2 x USB-A 3.2 Gen 1 (5Gbits/sec)	2 x USB-A 3.2 Gen 1 (5Gbits/sec)	2 x USB-A 3.2 Gen 1 (5Gbits/sec)	4 x USB-A 3.2 (1 x Gen 2, 10Gbits/sec; 3 x Gen 1, 5Gbits/sec)	✗	2 x USB-A 3.2 Gen 1 (5Gbits/sec)	4 x USB-A 3.2 Gen 1 (5Gbits/sec)
✓ (2)	✓	✓	✓	✓ (combo)	✗	✓	✓
✗	✗	✗	✗	✗	✗	✗	✗
195mm	150mm	150mm	120mm	180mm	120mm	110mm	110mm
✓	✓	✗	✓	✗	✓	✓	✗
5°/35°	5°/23°	3°/22°	5°/25°	5°/25°	2°/15°	-5°/40°	-5°/40°
45°/45°	45°/45°	45°/45°	170°/170°	180°/180°	✗	60°/60°	60°/60°
✗	✗	✗	✗	Full HD	4K	Full HD	✗
✓	✓	✓	✗	✓	✗	✗	✗
✓	✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✗	✓	✓
2 x 2W	2 x 2W	2 x 3W	2 x 1W	2 x 5W	2 x 5W	2 x 5W	2 x 5W
DP, USB-C	HDMI, USB-B	DP, HDMI, USB-C	DP, USB-C	DP, HDMI, USB-C (to C/A)	Thunderbolt 4	DP, USB-C, USB-B	HDMI, USB-C, USB-B
✗	✗	✗	✗	✗	Bluetooth 4.2, DeX, remote control, Tizen OS, Wi-Fi 5, Smart Things Hub	✗	✗
712 x 242 x 427-622mm	612 x 210 x 388-538mm	714 x 240 x 452-602mm	610 x 233 x 377-497mm	807 x 250 x 421-601mm	611 x 135 x 410-530mm	613 x 217 x 423-533mm	807 x 217 x 423-533mm
9.4kg	5.8kg	10kg	8.2kg	11.7kg	10.7kg	8.4kg	9.1kg



What to look for when buying a monitor

Before you jump into individual reviews, it's worth considering the bigger picture when selecting which display is right for you

■ Colour giveaways

The days when a bog-standard monitor produced terrible colours are long gone: even entry-level displays will cover a solid range of colours with respectable accuracy. But that doesn't mean you need to settle for mediocrity. If you want a display with colours that punch you between the eyes, or you prize accuracy over wide gamuts, there are clues.

The first clue comes in the type of panel (see IPS vs VA, below). This rule of thumb still holds: IPS produces the whitest whites, OLED the most vivid colours and richest blacks, and VA sits somewhere in the middle.

But if you're willing to dig into the specs you'll find more hints. As we discuss in "The magic of FRC" opposite, a 10-bit panel will produce more colours than an 8-bit panel and an 8-bit panel more than a 6-bit panel – until FRC gets involved. And it can be surprisingly effective.

Reputable manufacturers also put their monitors through their own tests to produce colour coverage claims. You might see NTSC, sRGB and DCI-P3 coverage quoted, for instance. Around 75% coverage of NTSC is good, and roughly equivalent to 100% of sRGB and 80% of DCI-P3. But for films and photos to look their best, you want close to 100% for all three spaces.

Contrast ratio shouldn't be used as a proxy for quality, but it will tell you how impactful blacks will look. Nor is



ABOVE Even budget displays cover a wide range of colours with respectable accuracy

average Delta E (a measure of colour accuracy) the indicator it used to be. Almost all the monitors on test achieve an average Delta E of less than one, which used to be quite an achievement as it indicates near-perfection so far as the human eye is concerned.

There's only one way to truly see

how good a panel is, and that's to read independent tests such as *PC Pro*'s.

IPS produces the whitest whites, OLED the most vivid colours and richest blacks, and VA sits somewhere in the middle

■ Gaming choice

This group test doesn't include gaming monitors as they are a niche to

themselves. However, if you're looking for a general-purpose display that also makes games look good there are three things to look for.

The first is refresh rates. Most monitors stick at 60Hz, which is fine for day-to-day use, but once you go above 100Hz you'll find that fast-paced in-game action looks smoother, and gives you a competitive advantage too. Ideally you want adaptive sync support as well, as this synchronises the refresh rate of the monitor to the output of the graphics card. AMD FreeSync is bog standard. If you're serious about gaming, you want one of Nvidia's G-Sync processors inside (see tinyurl.com/357gsync).

Finally, look for low response times. For most, 4ms grey-to-grey is fine, but gaming monitors will go far lower.

■ Curved vs straight

Some people swear by curved monitors, especially gamers as it helps them feel more immersed in the action. Even more so if you opt for a setup with two, or even three, curved monitors. You'll see that all three of our curved monitors this month have a 1500R rating, which means that if they formed a circle around you the radius would be 1,500cm – so, one-and-a-half metres.

If you're using a single 32in or 34in monitor then the effect isn't so notable, but it's true that it reduces the amount of head movement required to see the corner of the screen. We don't think it's a killer reason to choose one screen or another at this size, however.

■ IPS vs VA

All the monitors here use in-plane switching (IPS) or vertical alignment (VA) panels. IPS panels tend to give cleaner whites, so are often favoured for business use, while VA panels tend to offer greater contrast and lower response times. They're also easier to use in curved monitors.

But "tend" is an important word there. For instance, the IPS panel in Eizo's ColorEdge CG2700X had a greater measured contrast ratio than one of the VA panels on test, and NEC uses VA technology in its MultiSync E274FL monitor – and that delivered fantastic whites.



ABOVE Curved monitors make games more immersive

RIGHT Some monitors, such as Samsung's ViewFinity S9, can pivot to a portrait orientation

Those rules of thumb still hold, but don't base buying decisions on them. Instead, look for independent testing.

Flexible choices

Only one monitor in this group test, the AOC 27B3CA2, doesn't include a height-adjustable stand. And we feel such a stand is now crucial so that you can put the monitor at exactly the right height (the top of the screen should be at eye level, or slightly below, so that you're always looking downwards – it's all about posture).

You'll never regret having a flexible stand, so look for the capability to pivot it through 90° and to tilt a generous amount. ViewSonic wins here, with both of its monitors providing a superb 40° backwards tilt compared to the typical 20° to 25°.

Having a VESA mount slot means that you can buy an arm or wall mount, which isn't mainstream but some people love them.

How big should you go?

There's no right answer to the size question. We set 27in as the minimum for this group test, but you may find a 24in panel makes more sense, especially if your budget only extends to 1080p screens. On a 27in screen, this gives a density of 81 pixels per inch (ppi) and that means text can look fuzzy. A 24in Full HD screen has 92ppi, so looks sharper, but now eyesight comes into the equation: if you must increase the dpi in the OS to make everything easier to read, you're losing out on resolution.

On the other hand, we review three 27in screens with a 4K resolution in this Labs, and ended up loving the sheer amount of detail on offer. Plus you don't need to move your head around to see what's going on, as you do with a 32in panel.

As we said, there's no right answer. So let's instead go for yet more rules of thumb. For most people, a pixel density of over 100ppi will look



You'll never regret having a flexible stand, so look for the capability to pivot it through 90° and to tilt a generous amount

sharp. And generally, in terms of screen size, bigger is better. We'll leave the rest of the decision to you.

Time to dock

Anyone who uses a laptop powered by USB-C should seriously consider a docking monitor. One that includes a USB-C port, that ideally features an RJ45 port for wired networking, and that includes enough ports for your peripherals. Just make sure that its USB-C port delivers enough power. In general, 60W and above is fine, but demanding laptops (especially those with discrete graphics) may want more.

Some people also like to plug multiple computers (or a console) into their monitor, in which case look for a USB-B port as you will then be able to share connected peripherals between devices.

Look at the warranty

People often skirt over the warranty when buying electronic goods, and that's fine if things don't go wrong. If something does happen, though,

you'll be extremely pleased to have paid a little more for a monitor with an on-site swapout warranty, as the company will swoop in, remove your faulty display and replace it with a working unit. With a collect-and-return warranty, they will arrange collection and attempt to repair it, usually within 14 days. And with a lowly return-to-base warranty, you're responsible for sending it back to the repair centre.

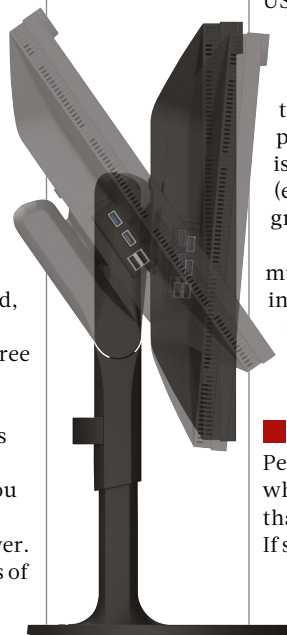
Fortunately, monitors are some of the most reliable IT kit around, which we know from our annual Excellence awards (see issue 351, p26). You can see how satisfied our readers are with each company with the scores in the feature table on p80.

Sustainability questions

Finally, we come to sustainability. Monitors are not a product that you will be able to repair yourself, so we're looking for circularity (how easy it is to reuse components at end of life), recyclability and the environmental cost of building and shipping each monitor.

Naturally, we have to rely on the companies' own environmental claims (for example, use of post-consumer recycled plastic) and third parties for this. While imperfect, EPEAT is the best proxy we've found, as it examines supply chains for the parts used in manufacturing and delivers a wider verdict on each company's actions. This is summarised in the EPEAT rating on the feature table on p80.

One final word: a product that is thrown away after three years of use is far less sustainable than one that delivers great results for ten years. This is one of the reasons why we will often recommend Eizo's monitors, for instance, despite their high initial purchase price.



LEFT A display that can be tilted will be better for your eyes and your posture

The magic of FRC

Scan the "Display colours" line in our feature table on p80 and you'll see that the screens on test range from 6-bit to 10-bit panels. As you would expect, more bits equals greater colour coverage. And a higher price.

A 6-bit panel covers 262,144 colours, but that's not nearly enough for modern tastes. That's why every 6-bit panel here has added a technology called frame rate control, or FRC. Also known as "temporal dithering", FRC

alternates between different colour shades quickly enough to simulate the desired shade.

FRC is so effective that few would be able to tell between a 6-bit + FRC panel and a true 8-bit panel, and they can both claim to cover 16.8 million colours (16,777,216, or 256³, to be precise).

Many manufacturers also employ FRC to boost their 8-bit panels to 1.07 billion colours (1,024³). This matches the range of colours provided by 10-bit panels.



Acer Vero B277 Ebmiprxxv

Not a perfect monitor despite our five-star rating, but it's terrific value

SCORE ★★★★★

PRICE £124 (£149 inc VAT)
from currys.co.uk

We know that not everyone has hundreds of pounds to spend on a monitor, and that some people prefer to buy a pair for an extended desktop. And you'll struggle to find a better budget choice than this Full HD 27in panel.

Of course, there are drawbacks. A pixel density of 81ppi means a lack of sharpness around text edges, while you lose the sheer definition in images; if you can afford it, we'd always recommend choosing a monitor with over 100ppi. And, unlike the AOC 27B3CA2, there's no USB-C docking option here, with Acer providing a thoroughly traditional trio of video inputs instead: DisplayPort, HDMI and our old friend VGA.



You can use it as a USB hub, though, with four USB-A 3.2 Gen 1 ports (5Gbits/sec) on offer – two mounted handily on the side – if you take advantage of the upstream USB-B connection. Acer even provides the cable, along with ones for DisplayPort and HDMI.

There are a couple of surprises on the audio front, too. Not only do you get a 3.5mm jack for output, but also for input – so for connecting a 3.5mm mic. Acer even throws in a pair of surprisingly respectable speakers, which are just about good enough for listening to music, but don't turn up the volume too high. More surprising still, Acer provides

ABOVE The Vero B277 packs a few surprises for a budget display



gamer-friendly features. There's support for AMD FreeSync, to counter tearing, while a 100Hz peak refresh rate is as surprising as it is welcome.

Acer states that this monitor's brightness tops out at 250cd/m², but it reached 315cd/m² in our tests. Elsewhere its scores reflected its price, covering 92% of the sRGB gamut and 76% of DCI-P3. To our eyes, though, colours looked punchier than the similarly priced AOC 27B3CA2, especially at top brightness. Colour accuracy is okay rather than special, with an average Delta E of 1.48 but a peak of over ten. Pro designers should steer clear.

There was one final surprise: the OSD. Many budget monitors marry awkward-to-hit buttons with clunky navigation, but here Acer provides a superb joystick system coupled with activation buttons behind the display. Please, everyone else, take notice.

If you choose to buy this monitor, also take note of the exact model number. We tested the Acer Vero B277 Ebmiprxxv, and that string of letters marks it out from many other members of the B277 range; typing tinyurl.com/357acer277 into your navigation bar should take you to the relevant page on the Currys website, and we recommend you take advantage sooner rather than later.

Acer Vero CB272K bmiiprx

If you don't care about USB-C but relish 4K levels of detail, this is the monitor for you

SCORE ★★★★★

PRICE £224 (£269 inc VAT)
from currys.co.uk

You can usually be confident of aggressive pricing from Acer, and it doesn't disappoint here. The next cheapest 4K screen, BenQ's PD2706U, costs £399, while the BenQ BL2790QT costs £270 and includes a mere 1440p panel. No contest, surely?

In some ways, no. Photographers or film lovers who love detail will appreciate the level of detail on show here, and if you have good eyesight and devour spreadsheets – or tend to work with two windows side by side – the same is true for business use.

Technically, this is a superior panel too, as it's a true 8-bit display that uses FRC to increase colour coverage to 1.07 billion colours. The BenQ BL2790QT, by contrast, is a 6-bit panel with FRC



taking its colour range to 16.7 million colours. In reality, there's little between them: the Vero covers 75% of the DCI-P3 space to the 73% peak of the BenQ, and both offer similar levels of (excellent) colour accuracy.

Whites look whiter the higher you push the brightness, but this increases power consumption: at 200cd/m² the Vero wanted 20W, pushing up to 24W at full brightness of around 280cd/m², though head to the OSD and you can activate Max Brightness to take it to a searing 420cd/m². That's 70cd/m² more than Acer claims.

Switch to HDR mode and the display will boost the contrast between black and white in films and games. And

ABOVE The 4K resolution provides lots of onscreen detail



while it offers only a 60Hz refresh rate, the 4ms response time and AMD FreeSync support keeps action looking smooth. With a mediocre set of speakers inside, though, you'll want to take advantage of the 3.5mm jack sitting next to two HDMI inputs and one DisplayPort at the rear. That's your lot: there's no USB-C here, no USB hub and no RJ45 port.

The stand is nice and solid, with a huge 165mm of height adjustment and a phenomenal amount of movement: up to 35° tilt and very nearly 360° of swivel. We also like the OSD, with a trio of shortcut buttons (two of which can be reassigned) and a mini joystick for speedy control.

One final note on the Vero branding. This marks out Acer's most environmentally friendly products, and here that boils down to the use of more recycled plastic than a typical monitor. That's a worthy move, but ideally we'd be looking for an EPEAT Gold rating rather than Silver, and some design tweaks to make it easier to repair and recycle at the end of life.

But let's not be too critical. Only Eizo is truly leading the way here, and that's reflected in the price of its monitors. You may not get much in the way of frills, but a good-quality IPS panel with a 4K resolution is hard to argue with at £269.

AOC 27B3CA2

A stripped-down USB docking monitor for £150, but its sibling is a better option

SCORE ★★☆☆

PRICE £125 (£150 inc VAT)
from amazon.co.uk

We were hoping to review the AOC 27B3CF2 in this Labs, as you can buy it for a similar price to the 27B3CA2 and they're identical but for one factor: the stand. Where the version with A2 at the end has a lightweight plastic stand that keeps the monitor at a fixed position, with the bottom roughly 110mm above your desk, the F2 offers 110mm of height adjustment.

Both monitors offer the tantalising prospect of a 27in USB-C docking monitor for around £150, and to hit that price point AOC has had to make some compromises. Let's start with the features: you only get two USB-A ports (5Gbits/sec), and nothing in the way of extras, unless you count the 3.5mm



headphone socket. Aside from this, only an HDMI port graces the rear.

Nor do you get hedonistic features such as a stand with swivelling capabilities, but as this unit weighs a mere 4.4kg it's easy to manoeuvre and to carry round an office. At least you get some tilting action, with 5° forward and 23° back.

Naturally, this is a Full HD monitor rather than 1440p. As with all its Full HD 27in rivals, you lose sharpness around text edges, and there simply isn't as much room for details, which makes it less useful for workers who like to view two documents side by side, especially if one of those

ABOVE USB docking monitors don't come much cheaper



documents is a detail-packed spreadsheet. However, whites look fine, so we were happy to use it for day-to-day tasks, and with 65W power delivery over USB-C it could be rolled out in offices where workers bring in their own laptops.

You shouldn't expect bags of colour; next to the Acer Vero B277 Ebmpirzxxv, there's only one winner. It covers a reasonable 92% of the sRGB gamut, though, and an average Delta E of 1.35 suggests respectable colour accuracy. The one area of our testing where it fell down was brightness and contrast uniformity: out of 24 test areas, DisplayCal only gave one the green light.

We would love to end on a complimentary word about speaker or OSD quality, but sadly, no. In "Englishmen in New York", Sting sounds like he's singing down a phone line from the 1970s, and AOC's OSD is looking increasingly dated compared to rivals. It's okay once you get used to it, but there's an unnecessary learning curve.

All of which means that there really is only one reason to buy this screen: that you're desperate for USB-C docking and only have £150 to spend. In which case we recommend you seek out its 27B3CF2 sibling with an adjustable height stand.

BenQ BL2790QT

A unique mix of features and keen price make this Mac-friendly display a good option

SCORE ★★★★★

PRICE £225 (£270 inc VAT)
from laptopsdirect.co.uk

There's a lot to like about this 27in, 1440p monitor. Especially for owners of Apple laptops, as BenQ goes out of its way to colour-match its output with MacBook screens via the M-book mode. And that's just the start: the brilliant OSD, arguably the best here, makes it simple to switch profiles between Coding, Movie, Game and sepia-tinted ePaper.

Those who find their eyes are tired by the end of the day will appreciate the Care mode, which uses an ambient light sensor to keep the screen at sensible brightness and contrast levels. You can also manually adjust low blue light options, with five intensity levels to flick between, while BenQ says its Flicker-Free Technology "eliminates flickering... to reduce eye strain, fatigue and headaches". It also offers a



Colour Weakness Mode, where you can tweak the red and green filters.

A 1440p resolution is a great choice on this size of display. That works out at 109ppi, so at normal viewing distances it's sharp. Sure, you miss out on the 4K detail of the similarly priced Acer Vero CB272K, but we prefer the whites of the BenQ display.

Don't expect wide colour gamuts. Despite all those menu options, its DCI-P3 coverage stayed at around the 70% mark throughout our tests, and in reality this panel is tuned to the sRGB space: it covered 98% out of a 103%

ABOVE The 1440p resolution looks sharp on this size of display



volume in its default mode. Colour accuracy is excellent, too, with an average Delta E of 0.43. For a 6-bit panel that reaches 16.7 million colours using FRC, we were pleasantly surprised by its quality.

BenQ also packs in a pair of high-quality speakers; certainly good enough to listen to music to during a working day. There's no webcam, but oddly there is a microphone - complete with noise reduction - which may well do a better job than a standalone webcam's. Another minor surprise: this stand swivels. Its slim, square stem looks like it should stay in place, but offers 20° of movement each way. There's a decent 110mm of height adjustment, too.

Connectivity is mixed. There's no RJ45 port and no USB-B input, so the three USB-A ports (two crammed into the rear, one at the side) and data-only USB-C port can only be used if you're connecting via USB-C. Those with power-hungry laptops should note that this only delivers 65W. But, unusually, it offers a DisplayPort out for daisy-chaining a second display, and there's a 3.5mm input to go along with the normal headphone jack.

Even without these features the BenQ BL2790QT is a great-value choice, but if you'll take advantage of them then it's a no-brainer.



BenQ PD2706U

A quirky 27in 4K display with professional aspirations and a competitive price

SCORE ★★★★★

PRICE £333 (£399 inc VAT)
from scan.co.uk

If you're a graphic designer but your budget doesn't reach Eizo levels, then there are some extremely compelling reasons to choose the BenQ PD2706U. Let's start with the obvious: this is a 27in 4K screen, so that means you enjoy incredible amounts of detail.

Unlike the Eizo ColorEdge CG2700X, it uses an 8-bit panel plus FRC (see p83) to reach 1.07 billion colours, but if you're happy to stick to the sRGB, Display P3 and DCI-P3 colour spaces then it covers them all with superb accuracy. For example, switch to sRGB and it covers 98% with a 100% volume, while DCI-P3 covers 92% with no overspill. With a maximum (not average) Delta E of 1.81, you can trust what your eyes show you.



BenQ sweetens the deal thanks to a wired Hotkey Puck, which lets you easily switch between presets while a dial means you can swoosh through options. Head into the OSD and there's even a dual-screen mode, which splits the panel in two so you can work in different colour spaces side by side. This is an OSD that's well worth exploring, too, with a huge range of colour-tuning options. Buy a calibrator and you can fine-tune it to your heart's content.

It's attractively designed with slim bezels, with 150mm of height adjustment, 30° of backwards tilt but limited swivel at 20° on either side.

ABOVE This 27in 4K display has incredible amounts of detail



There's no RJ45 port and no webcam, but other than that you'll want for nothing. The DisplayPort 1.4 and HDMI 2.0 inputs are joined by a USB-C port delivering up to 90W of power, with a USB-C, USB-A and 3.5mm jack on the right-hand side. Two more USB-A ports sit at the rear alongside a USB-B connector, so you can share peripherals between computers. The speakers are just about good enough for listening to music, but you won't be blown away.

If you do buy this monitor and the brightness looks duller than you'd expect (it promises 350cd/m² and we measured a peak of 348cd/m²), head into Color | Advanced | Uniformity isn't switched on. Doing so smooths out the differences from edge to edge, but also reduces your peak brightness to around 180cd/m². We don't think it's worth the sacrifice.

The BenQ PD2706U can't hold up to all the colour options provided by the Eizo FlexScan CG2700X, which also offers a superior warranty: BenQ's PD series include three years of collect-and-return cover, so if something goes wrong you may have to wait two weeks for a replacement. Still, though, BenQ PD2706U is a compelling buy if you have £400 and will use its colour-switching skills.

Iiyama ProLite XUB2763HSU-B1

A low-energy, no-frills 27in IPS panel that delivers solid image quality

SCORE ★★★★★

PRICE £120 (£144 inc VAT) from scan.co.uk

The ProLite XUB2763HSU-B1 has one obvious rival here: the Acer Vero B277. Give or take a fiver, they cost the same, both include a 1,920 x 1,080 IPS panel and both lean heavily on their green credentials.

In the Iiyama's case, that means the plastic is 85% PCR, the packaging 100% recyclable and made from cardboard pulp, an EPEAT Silver rating and arguably most importantly an incredibly low power rating. Even at its peak 251cd/m² brightness, it drew 11W dropping to 10W at our standard test brightness of 200cd/m². That compares to the typical 16W to 18W for 27in panels in this test.

Iiyama jettisons frills such as USB-C and RJ45 connectors in its quest to hit such a low price, but let's concentrate



on what you do get. Two video inputs, one HDMI 2.0 and one DisplayPort 1.2, sit alongside a two-port USB hub. Both ports are only 5Gbits/sec, but without USB-C you're reliant on a USB-B connection back to the host PC anyway.

Both USB ports sit on the left of the screen rather than the rear, making them slightly easier to access, and the flexible, high-quality monitor stand can swivel through 45° and pivot 90°. You may also want to use the 3.5mm headphone jack at the rear after listening to the weedy speakers.

There is some entertainment potential, thanks to a 100Hz refresh

ABOVE The 8-bit panel provides good colour coverage and accuracy



rate, 3ms response times and support for AMD FreeSync to prevent tearing. We were surprised to see these features in such an affordable monitor.

More good news: this is an 8-bit panel, which always helps when it comes to colour coverage and accuracy compared to 6-bit panels that use FRC. In its default mode, the ProLite covered 94% and 72% of the sRGB and DCI-P3 gamuts respectively, with an average Delta E of 0.95. Highly respectable results.

As we'd expect from an IPS panel, whites look good, but we'll add two caveats for those who are looking for a Word or Excel partner. One is that a Full HD 27in panel has an 81ppi pixel density, so text never looks as sharp as it will on panels that go above 100ppi. The second is that the default profile's colour temperature is 6078K rather than the ideal of 6500K, so you may find it useful to play around with the colour temperature options in the easy-to-use OSD. You can also use Iiyama's i-Style presets for Scenery, Text, Cinema and Games, but don't expect to see any huge changes.

With an aggressive price, superb performance in our annual reader survey for support and reliability, plus a three-year swap-out warranty, this is a fine choice if your priorities are value and low energy consumption.

NEC MultiSync E274FL

Ideal for large rollouts, this 27in Full HD monitor packs USB-C and RJ45 connectivity

SCORE ★★★★★

PRICE £191 (£229 inc VAT)
from senetic.co.uk

In some ways, the NEC MultiSync E274FL's natural rival in this Labs is the AOC 27B3CA2, which on the surface has one obvious advantage: price. Where the NEC costs £191 exc VAT, the AOC costs a mere £125. For the businesses that are likely to buy this monitor, however, that extra £66 should be seen as an investment.

Certainly you can expect the NEC's stand to live up to the abuse of employees, as it feels robust to the point of over-engineered. The monitor lifts smoothly through its 120mm of height adjustment, while the screen rotates easily through 170° in either direction.

Another big difference comes in the RJ45 port at the rear, which not only offers users connection to the



local network but gives admins a route to control display settings (and keep track of assets) via Sharp/NEC's NaViSet Administrator 2 software.

The rear also houses the crucial USB-C connector, even if we would prefer more power than 65W, plus DisplayPort and HDMI inputs. There's no USB-B input, so forget sharing keyboards and mice between two computers, and it would have been nice to see more than two USB-A connectors as well. These are tucked away at the rear, which would be annoying except that the screen smoothly pivots (in either direction), and that flexible stand makes it easy to access all the ports.

ABOVE The E274FL has lots of office-friendly features



Unusually, NEC has opted for a VA panel rather than IPS. That can sometimes lead to imperfect whites, but once we switched to the sRGB colour preset we had no complaints. Colour coverage is par for the course, peaking at 94% of the sRGB space and 75% of the DCI-P3 gamut, but we were pleased to see a peak brightness of nearly 300cd/m² compared to the claimed 250cd/m².

It's also easy to adjust settings thanks to NEC's best-in-class OSD. Controlled entirely by a joystick, and backed by snappy performance, you can flick between colour temperature presets, tune it yourself and explore the admittedly limited options. Think Eco mode, DV mode and increasing response times – but this is not a gaming monitor, with a 60Hz refresh rate and 6ms grey-to-grey response time at best. As for the pair of 1W speakers... well, music is bearable, but think video calls rather than after-hours entertainment.

With a three-year warranty and so many office-friendly features, the MultiSync E274FL earns its Recommended award for business rollouts rather than outright quality. But if that's what you need it for, this monitor is a terrific choice.

ViewSonic VG2756V-2K

A high-quality 1440p display, but wait for the VG2757V-2K if you want a webcam

SCORE ★★★★★

PRICE £333 (£399 inc VAT)
from uk.insight.com

As a rule, we're fans of 1440p 27in screens. They feel more spacious than 1080p rivals, making it a pleasure to work on two windows side by side, and text looks sharp. This is one reason the £270 BenQ BL2790QT wins a Recommended award. The ViewSonic VG2756V-2K offers similarly high image quality, plus a bunch of extra features to justify its significantly higher price.

Chief among these is its USB-C connection. This makes the monitor both more suited to office rollouts and more appealing to laptop users, with up to 90W of power delivery. ViewSonic even sweetens the deal by embedding a pop-up 1080p webcam into the top of the display, complete with LED lights, but those hoping to launch a streaming career will be



disappointed: the results are so grainy we would only use it in an emergency.

You can also use the webcam if you connect over HDMI (not DisplayPort), thanks to a USB-B connector. This gives access to the two USB-A ports, with one sitting handily on the side, and also means you can connect two computers and jump between them with the same keyboard and mouse. The final port of note is a handy RJ45 connector, adding yet further to this monitor's docking credentials.

Don't expect pristine sound from the pair of 5W speakers, but they go loud, include more bass than most rivals, and vocals and instruments

ABOVE This well-built monitor offers quality and lots of features



come out clearly. There's also a solid microphone, so long as you ignore its noise-reduction features, but ViewSonic's decision to label the OSD navigation keys with volume and mic controls rather than oversells this display's videoconferencing abilities. And those labels, which overlay the buttons, only add to the confusion once you're in the OSD. We've used far worse OSDs, and at least the menu responds quickly to presses, but it's not going to win any user experience awards.

Not that there's a huge amount of colour control here anyway. The 8-bit panel has a wider gamut than rivals based on 6-bit and FRC (see p83), covering 100% of the sRGB space and 81% of DCI-P3, but switching colour profiles makes little difference to the panel's properties. Windows users should stick to the default colour profile, Mac users the ready-made preset to match MacBooks, and everyone should be happy with the whites and colour accuracy – the average Delta E is a terrific 0.32.

As ever with ViewSonic, build quality is excellent, with the stand offering plenty of movement – including 110mm of height adjustment and an exceptional 40° of backwards tilt. We look forward to reviewing its successor, the VG2757V-2K, which has an upgraded camera.



AOC CU34P3CV

We're dumbstruck by the amount of quality and features you get for the price

SCORE ★★★★★

PRICE £317 (£380 inc VAT)
from amazon.co.uk

If we purely decided star ratings based on value for money, then this curved 34in monitor would be walking away with ten. It's almost unbelievable that you're buying this much quality for less than £400 inc VAT: in terms of whites, colour coverage and colour accuracy it was consistently in the top five of a competitive field. It even topped the table for brightness variation, and while its peak of 355cd/m² can't match the very best screens, that's still more than enough to be viewable in bright environments.

Nor does the CU34P3CV sacrifice any vital features to hit a price. It ticks all the key points for a USB-C docking monitor, with 65W power delivery plenty for most laptops, an RJ45 port, four USB-A ports (two at the rear, two



on the left) and a USB-B port to share peripherals between computers. HDMI 2.0 and DisplayPort 1.4 inputs round out the connectors.

There's even some gaming ability. AOC generously pumps up the refresh rate to 100Hz, while the VA panel offers a respectable 4ms response time (grey-to-grey) with a measured contrast ratio of 3,370:1 to help see the action in darkened corners. The less time we spend talking about the speakers the better, however, as they're arguably the worst here; Sting was less "Englishman in New York" and more "Englishman in a Wheelie Bin", such was the echo.

ABOVE The AOC CU34P3CV offers incredible value



As with the AOC 27B3CA2, we frequently cursed the OSD. Navigation is made all the more difficult by AOC's decision to mark the key functions with the faintest of icons on the black bezel. Perhaps it's fortunate that the OSD offers little in the way of options; aside from the default colour profile, your only notable choice is an sRGB mode. But we don't recommend you use this, as it reduces sRGB coverage to 88% and DCI-P3 to 68%.

Other drawbacks? While AOC provides a good three-year warranty, it's return-to-base so you'll pick up the courier costs. And despite the promotional material boasting of a "three-sided ultrathin bezel design", your jaw won't drop in wonder at its beauty. That's in part due to a basic plastic finish, which stretches to the chunky base of the stand – despite the attempt to add a brushed metal effect.

The stand again puts function over aesthetics, but we're not going to argue with 150mm of height adjustment. In truth, no-one should buy this monitor for its beauty. Instead, buy it for the superb screen quality, the phalanx of features and the astounding price.

Iiyama ProLite XUB3293UHSN-B5

Stripped back in places, but this 32in 4K panel offers good image quality and great value

SCORE ★★★★★

PRICE £358 (£429 inc VAT)
from currys.co.uk

Why pay over a grand for a 31.5in 4K monitor – namely the Eizo FlexScan EV3240X (see p91) – when Iiyama is selling this ProLite for a third of the price? There are reasons, particularly in terms of visual impact, but in truth you aren't making many sacrifices.

Let's start with image quality. In our technical tests, there was little to separate the two: they both cover 100% of the sRGB gamut, and the ProLite even has the edge for DCI-P3 coverage at 95% compared to 87%. Nor are we going to complain about an average Delta E of 0.81, which reflects the panel's strong colour accuracy. In fact, it's only side by side that you notice the extra punch provided by



the Eizo's 2,318:1 contrast compared to 1,092:1 for the Iiyama. Whites are crisper, too, but in isolation we don't think people will be disappointed.

Iiyama provides all the inputs we look for. You can connect via DisplayPort, HDMI or USB-C, with the latter offering a modest but still reasonable 65W of power delivery. There's an ever-useful RJ45 connector, while the USB-B port means you can share a keyboard and mouse between two connected computers. You only get two USB-A ports, but they're easy to access on the side and, while this screen doesn't officially support pivot mode,

ABOVE Image quality and a wealth of inputs make this a good choice



the fact that it rotates makes it simpler to plug in connectors. The stand is plain Jane plastic in appearance, but it offers plenty of movement – including 150mm of height adjustment – and feels solid.

The OSD echoes this back-to-basics ethos, with the fiddly controls providing access to few functions. Colour options are limited to three colour temperatures (warm, normal, cool) plus one user-adjustable option, and a handful of Iiyama's i-Style presets – Game, Cinema, Scenery, Text and Standard. Still, that's plenty for most users.

Audio comes courtesy of two 3W speakers, which pack volume and can cope with music at a push, but the balance veers far more towards treble than it does bass. You won't enjoy finely detailed classical music here, but we've heard far worse in this Labs. At this price, we're also happy with a three-year swapout warranty, and note that Iiyama won our most recent Excellence awards thanks in part to its reliability figures.

The biggest compliment we can pay the ProLite XUB3293UHSN-B5 is that it holds up well in comparison to the exceptional Eizo FlexScan EV3240X. It's far more basic than its luxurious rival, but offers solid image quality and simply stunning value for money.

Philips 34B1U5600CH

Another solid 34in curved widescreen, but it's made to look expensive by the AOC

SCORE 

PRICE **£458 (£550 inc VAT)**
from [amazon.co.uk](https://www.amazon.co.uk)

You can almost consider the Philips 34B1U5600CH as the spoilt older brother to the AOC CU34P3CV. They appear to share similar genes: both are 34in curved VA panels boasting a 3,440 x 1,440 resolution, and they gave near-identical (and strong) performances in our technical tests. Whites look good, DCI-P3 colour coverage is strong at 85%, and an average Delta E of 0.58 means you can trust that colours are accurate.

The reason it's spoilt is that this monitor gets many of the features that are missing on its AOC rival. There's a respectable, albeit grainy, 1080p webcam that supports Windows Hello, a power sensor that switches the screen off if it detects no-one is there, plus an



ambient light sensor. The speakers are also better; hardly hi-fi quality, but you can actually listen to music on the Philips 34B1U5600CH.

It wins the numbers game, too. Its refresh rate is better, at 120Hz to 100Hz. Philips also quotes a higher peak brightness, of 350cd/m² to 300cd/m², although in our tests the gap narrowed with 368cd/m² versus 355cd/m². And the one-upmanship stretches to the ports, with its main USB-C connector delivering 100W of power to the AOC's 65W. It also adds two USB-C ports to the four USB-A ports found on the hub, with half on the left-hand side of the display and half at the rear.

ABOVE The Philips display is a good, if expensive, option



The Philips also has a superior stand. That's true for the numbers – note its excellent 180mm of height adjustment – but also for fit and finish, with its swivel option being far smoother. Philips' OSD is also easier to navigate, but just like the AOC it's difficult to see what buttons you're pressing, and don't expect a huge range of useful options. It's worth using the SmartImage presets, though, as it can be useful to jump to, say, Easy Read or Low Blue Mode.

But here's the challenge for Philips. At well over £500, it's a hefty chunk more expensive than the AOC – its equal for panel quality – while the also excellent-value-for-money Iiyama ProLite XUB3293UHSN-B5 sits in the middle. And the Iiyama has a better warranty than the Philips, as it offers on-site swapout rather than return to base (where you have to cover courier costs to get it repaired).

The 34B1U5600CH is a fine screen, and if you'll take advantage of its extra features then you can argue it's worth the premium over the AOC. However, it needs to drop below £500 to compete for awards against this month's ferocious competition.

ViewSonic VG3456C

Not the punchiest of panels, but the VG3456C wins for style and covers most bases

SCORE 

PRICE **£427 (£512 inc VAT)**
from [uk.insight.com](https://www.uk.insight.com)

A letter can make a big difference in a monitor name, and none more so than here. The ViewSonic VG3456 (see issue 326, p95) is a highly affordable flat-screen monitor that you can now purchase for around £250, while the VG3456C is curved – exactly like the AOC CU34P3CV and Philips 34B1U5600CH. They also share the same 3,440 x 1,440 resolution, giving you huge amounts of space on which to spread your windows, and VA technology.

The ViewSonic is the most stylish of the three, with slim bezels and a fuzzy speaker-like finish to the bottom edge of the monitor. We only wish the pair of 5W speakers could live up to the billing, but like so many others here they're better suited to



speech radio and web calls than listening to music or enjoying films.

We were also struck by this monitor's tilting skills: you can push it backwards by 40°, which may well be the killer feature for some situations. While its height adjustment is limited to 110mm, that should be enough for most setups, and we'd give it a firm tick for stand quality overall: you feel like you're buying a high-quality piece of kit.

The panel is much more average. Rather than true 8-bit colour, this is a 6-bit + FRC affair, and this is one reason why its gamut is more limited than its curved 34in rivals. In native mode, it covers 74% of the DCI-P3 gamut compared to 88% and 85% for

ABOVE The curved 34in screen gives you huge amounts of space



the AOC and Philips. But if you're happy with the sRGB gamut then it's fine, covering 97% out of a 104% volume. Accuracy is strong, too, with an average Delta E of 0.69.

With a stated peak brightness of 400cd/m², we were surprised to find the monitor maxed out at 280cd/m² in our initial tests. But then we went into the (excellent) OSD and discovered that ViewSonic ships it with the Energy Saving mode switched on; deactivating this pushed the panel up to 435cd/m². This also boosts the whiteness of the whites, but the penalty comes in power consumption: 48W compared to 31W at 200cd/m².

ViewSonic doesn't load this monitor with extras, so if you're hoping for a webcam or KVM switch then you'll be disappointed (there's no USB-B input, either). But it does cover the docking station basics, with an Ethernet port and a USB-C video input that can deliver 98W of power. All four USB-A ports are 3.2 Gen 1, so 5Gbits/sec, with two sensibly positioned on the left-hand side.

It adds up to a solid curved 34in monitor, even if we prefer the punchier colours from the AOC and Philips. If the price drops closer to £400, it will become a strong choice. ➔



Eizo ColorEdge CG2700X

A fantastic investment for creative studios thanks to the trust you can have in its long-term colour accuracy

SCORE ★★★★★

PRICE £2,149 (£2,579 inc VAT)
from wexphotovideo.com

The ColorEdge CG2700X stands out from other monitors in this group test for many reasons. First, this is a monitor absolutely and unapologetically designed for creative professionals. Second, and tied to that, its huge top bezel contains a built-in calibrator (more on that in a moment). Third, its price, which is six times that of the BenQ PD2706U – which is also a 4K 27in monitor with its eye on the creative market.

A 10-bit panel sits at this monitor's foundation. As we mentioned in the buyer's guide on p82, this means it can cover 1.07 billion colours without the use of FRC, and it's one of the indicators of professional-level quality here. Years ago, you would have needed a pro-quality graphics card to supply a 10-bit signal, but the rising quality of consumer graphics cards (and Nvidia's Studio driver) means this is no longer the case.

However, the ColorEdge still needs to be part of a colour-managed system if you want to maximise your investment. Eizo's ColorNavigator 7 software is here to help, as it not only helps end users set up an individual monitor but also means a company can ensure all the ColorEdge monitors, in all their offices, will display the same colours.

It enables them to control the brightness, too, and Eizo is keen to promote the sustainability of its ranges. A big part of that is power consumption, and while this monitor can push all the way up to 545cd/m² it still looks great at 200cd/m² (and, unusually, you can push it right down to 40cd/m², while the OSD even tells you how bright it is). Using the supplied monitor hood helps to control the appearance of colours.

Eizo promises that this monitor will be up and running, producing



accurate colours, after three minutes rather than the 30 minutes creatives are used to waiting, which will help if you need to set it up on shoots.

Then there's its most unique feature: the built-in calibration tool.

You can set this to swing down automatically after a set number of hours (50 to 500) or at regular times – this could be daily, weekly, monthly or even annually. You can even keep working as it performs the calibration.

The other brilliant feature for designers is that you can so easily

jump between pre-calibrated colour spaces. These include the expected sRGB, Adobe RGB and DCI-P3 gamuts to those favoured by video editors: BT.2020 and BT.709. If you're using a BT.2020 clip, it can even warn you that it can't be reproduced in BT.709 and can show you how it will look to audiences who have more standard TVs.

Anyone who needs to edit HDR footage will also appreciate its support for hybrid log-gamma (HLG) and the perceptual quantization (PQ) curve, and you'll even see a warning if areas of an image – think extreme whites – can't be accurately displayed as they go beyond the peak brightness of the monitor itself.

Eizo is also notorious for its attention to detail, and that extends to its support for 100W when powering devices over the USB-C

ABOVE The ColorEdge CG2700X is as colour-accurate as you'd expect for the price



LEFT Eizo's monitor is the pinnacle of quality

BELOW Two of the four USB-A ports support USB 3.2 Gen 1

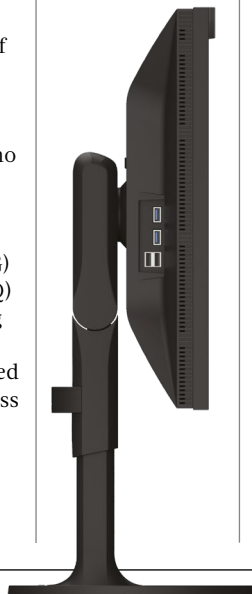
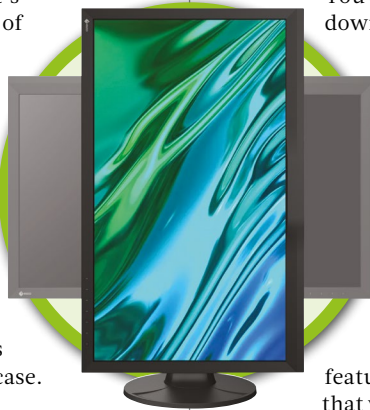
connection. Power equals heat, and that affects colours unless you dissipate it fast. And that's why there are two metal grilles at the rear of the monitor: not merely to look good, but to allow any excess heat to be removed without recourse to noisy fans.

We also love the OSD. It's by far the most informative on test, and it's packed with options that allow you to switch to different gamuts, gamma settings, ICC profiles and colour temperatures within seconds. You can also prioritise contrast deviation.

Alternatively, so long as you have a USB connection, you can use ColorNavigator 7. The rear offers a USB-B port next to the RJ45 connector (vital if you want to manage this monitor across a network), plus DisplayPort 1.2 and HDMI 2.0 inputs. Over on the left-hand side you'll find four USB-A ports, with two in blue supporting the faster USB 3.2 Gen 1 standard, but note the lack of a second USB-C port. The only other missing feature is a pair of speakers.

We've covered a lot of technical detail, but ultimately what Eizo is offering is trust. Trust in the colours you see, but also that this monitor will keep on delivering the goods for years. That's reflected in the build quality of the monitor and in the five-year on-site warranty, where Eizo will come and replace the faulty unit.

Clearly, you're paying for this in the up-front price, and many creative companies will get more value out of six BenQ PD2706U screens instead. Ultimately, though, the CG2700X is the pinnacle of quality and, so long as you support it with the right hardware and colour management system, it's worth the investment.



Eizo FlexScan EV3240X

Quality never comes cheap, and that's emphasised here – but if you can find the money, it's a terrific monitor

SCORE ★★★★★

PRICE £1,206 (£1,448 inc VAT)
from photospecialist.co.uk

Sometimes, numbers can't do justice to products. In fact, if you judged this monitor by numbers alone then it wouldn't even win an award, let alone the Labs Winner gong. No matter how well it might perform in technical tests, there was one number that would always rule them all: the price. It's more than three times as expensive as the award-winning Iiyama ProLite XUB3293UHSN-B5, despite them sharing the same 4K resolution and 31.5in screen diagonal, and scoring similarly in our tests.

We think the Iiyama is great – and stupendous value – but the Eizo will make you go “wow” in a way that no other monitor on test here can. Much of the credit for this must go to the combination of a 2,000:1 contrast ratio and the colour characteristics of an IPS panel. Aside from mini-LED panels, we've never been hit so forcefully between the eyes when looking at photos or films. Couple that with gorgeous whites and it's the best all-round image quality we've seen in a monitor this size.

Naturally, you also benefit from the extras offered by Eizo monitors. Let's start with the OSD, as this is not only incredibly intuitive and speedy – Eizo provides the best OSDs here by some margin – but also offers the ability to tweak colours to fine margins. Head into the Advanced Settings, for instance, and you can control hue, saturation and gain.

However, you'll probably find it easier to switch between the presets. Those are sRGB, Paper, Movie and DICOM (for medical environments), plus two user-defined slots. The sRGB preset is particularly impressive, locking the panel down to exactly 94% of the gamut, without any spillover, and with an excellent – albeit not exceptional in this month's company



– average Delta E of 0.61. Switch to Movie and it leaps from 66% coverage of the DCI-P3 gamut to 87% – again, with no leakage and strong accuracy.

While you don't get the high-end colour control provided by Eizo's ColorEdge monitors, nor its ColorNavigator software, Eizo's InStyle software is worth the 6.6MB download. Connect over USB-C or USB-B and you can save your colour preferences (useful if you connect to different Eizo screens in a hotdesking office) and activate the circadian dimming option – this gradually shifts the colour temperature over the course of a day.

The separate InStyle server tool offers some basic management for IT teams, too, so long as the monitor is connected via the wired network port. Useful if you want to prevent users pushing up the brightness too high or control how quickly its Power Save mode kicks in.

There are plenty of ways for users to control how much energy this monitor draws, too. Activate the EcoView mode in the OSD and it will change the brightness based on the ambient light conditions, and if you want to take manual control then it goes all the way from 1cd/m² up to 400cd/m² (despite its official peak of 350cd/m²).

As with the ColorEdge, you also benefit from a generous five-year warranty with the promise of on-site swapouts if something goes wrong.

ABOVE The FlexScan EV3240X is a winner with wow factor



LEFT Eizo provides a generous number of ports, including RJ45

BELOW The solid stand offers plenty of adjustment options

We also love how easy it is to set up Eizo monitors: they come ready assembled, so it's simply a matter of lifting them into place.

Here, despite what looks like a pair of fixed feet, the stand delivers a huge amount of flexibility. You can rotate through 45° in either direction, tilt it up 35°, adjust the height by an astonishing 195mm and pivot it 90° into portrait mode (imagine having two of these monitors side by side). We love the sleek bezels, too, giving the monitor a more modern look than previous Eizo screens.

Eizo provides a generous number of ports, with a pair of HDMI inputs and a DisplayPort alongside USB-C. Two USB-A 3.2 Gen 1 ports sit at the rear, too, with one more to the side next to a USB-C downstream port for connecting peripherals. This delivers up to 15W of power while the main USB-C connector can feed up to 94W.

There are even a pair of 3.5mm jacks, one for a mic and the second for headphones. You may never need this, though, as a pair of impressive 2W speakers round off the FlexScan's features. While they don't offer the miracle of a strong bass response, they're a surprisingly good choice for listening to music. You may even decide you don't need a separate pair of speakers.

Admittedly, that £50 saving only fills a small part of the nigh-on £1,500 you'll need to pay for this monitor. Despite the many advantages offered by the FlexScan EV3240X over Iiyama's far cheaper rival, that's tough to justify. But trust us when we say that if you find the extra budget for this monitor, you'll appreciate the purchase years after the pain of paying the bill has gone.



3D monitors on the rise

While 3D TVs never quite took off, the eye-catching technology in the latest glasses-free 3D monitors make them a great choice for designers, architects and even gamers

Turn to p48 of this month's issue and you'll see our verdict on the Lenovo ThinkVision 27 3D. This is the harbinger of what we expect to be a swathe of glasses-free 3D monitors, but these aren't going to be aimed at gamers or movie fans. Instead, the target market is 3D designers, 3D modellers, schools, medical institutions and more.

Nor is Lenovo on its own. Both Acer and Sony have already released portable monitors based on the technology, and we know that Acer has its own 27in desktop display – the Acer SpatialLabs View Pro 27 – on the way.

■ Lenticular technology

The basic concept behind these panels is nothing new. In fact, the idea of sending different signals to the eyes based on the viewer's position dates back to "tabula scalata" paintings created in the 16th century, where the viewing angle of a painting (split up into strips) determined which of two images people saw. Pick up a pound coin dated 2017 or later and you'll see the "£" symbol changes to a "1" in a similar way.

Now let's jump forward to 1838. This was when British scientist and inventor Charles Wheatstone unveiled his stereoscope, which wowed audiences by showing two subtly different images to the left and right eyes. No doubt you used a stereoscope of some form as a child. Anyone who had the misfortune of watching *Jaws 3-D* in cinemas in 1983 will again be familiar with the effectiveness of sending different images to the left and right eyes.

What's clever about this new generation of stereoscopic 3D screens is that there's no need to wear special glasses or to change your viewpoint. Instead, lenticular lenses (which themselves date back a century) overlay the screen. When the 3D technology is activated, half of the available pixels are beamed to your left eye, the other half to your right eye. All the new stereoscopic 3D displays feature eye-tracking technology so that they know exactly at which angle to adjust the lens.

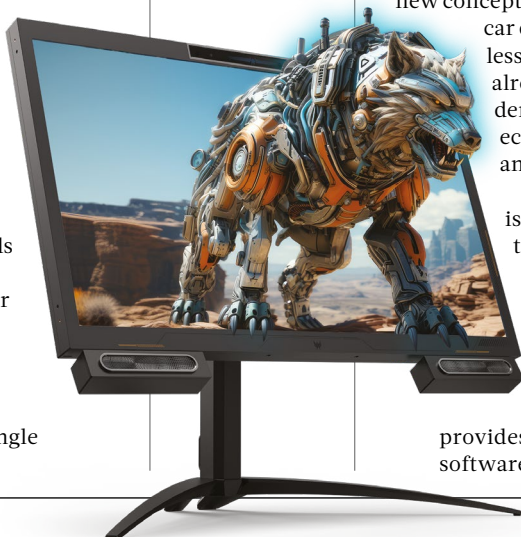


ABOVE 3D monitors are likely to be popular among 3D designers

Although this makes it sound simple, the reality is far more complex and relies on multiple tricks to work. For example, our brains deduce whether objects are closer by looking at relative sizes – we know that a car is smaller than a building – and this gives us an indication of depth. Software developers (and film-makers) can also use subtle blur effects to send messages to our brains that objects are further away than those in focus.

What's clever about this new generation of stereoscopic 3D screens is that there's no need to wear special glasses

BELOW The Acer Predator SpatialLabs View 27 is due out this year for \$1,999



■ Soft revolution

So the hardware is here. As ever in computing, however, it's useless without the software to support it. Fortunately, 3D modelling is hardly a new concept. From architecture to car design, from biology lessons to *Avatar*, there is already both supply and demand with a rich ecosystem of products and materials.

If all you want to do is enjoy 3D viewing on these devices, then you first need to install the manufacturer's viewing software. In Lenovo's case, that means 3D Explorer. Acer provides SpatialLabs viewing software, too. These both

provide plugins for popular 3D software, so you can export models and then view them in 3D. It's a slick process that "just works".

■ Breaking out of the niche

It should be obvious why those who work in 3D design and architecture would be interested in this new breed of monitors, but who else might buy one?

Certainly gamers should consider it. AR and VR headsets are helping to develop a market for 3D-enabled games, and it's relatively simple to port a 2D game to 3D as the depth information is already baked into the engine. Once you get to 27in, you're reaching the point where you can immerse yourself in the 3D world, too (the effect is less compelling on smaller screens). Acer is again in prime position here, having announced its Predator SpatialLabs View 27 at CES for \$1,999.

There are also sales environments. If you want to show a prospective car buyer exactly what an interior will look like, bringing it to life in 3D on a screen may be just the killer weapon. Likewise kitchen planners hoping to capture that big sale.

However, as we discuss in the review of the Lenovo ThinkVision 3D, you'll need recent, powerful hardware to keep the output looking smooth. And with limited supply, we think it's likely that 3D monitors will stay in their niche for some time yet.

Samsung ViewFinity S9 (S27C90)

A standout monitor for its “smart” TV and gaming features, its hardware calibration and its price

SCORE 

PRICE £833 (£999 inc VAT)
from [samsung.com/uk](https://www.samsung.com/uk)

On its website, Samsung lists this monitor as the S90PC ViewFinity 5K Smart Monitor, but it feels more like a smart TV on first “boot”. It asks to be connected to your Wi-Fi network, and once you’ve jumped through various hoops you’ll find yourself in Samsung’s TV Plus section with a huge selection of live channels. Just to hammer home the point, your first interactions are via a remote control rather than an OSD.

The remote offers dedicated buttons for Disney Plus, Netflix and Prime Video. We watched the first few minutes of *Top Gun: Maverick* and the detail was so rich on the 5K panel that we picked up several details we didn’t spot in the cinema. Samsung backs up the visuals with the best speakers here by some distance. Whisper it, but there’s even bass on show.

You can also play games via Samsung’s Gaming Hub, with an option to sync your Amazon account via Luna. It supports Xbox Game Pass and Nvidia’s GeForce Now services, too. Games look great, despite the S9’s modest 60Hz refresh rate.

But we’re getting this the wrong way round, for Samsung is promoting the ViewFinity S9 as a work first, play later monitor, so let’s head to the Workplace area of its Tizen OS interface. Here, you can wirelessly connect to a PC, a Samsung phone (using DeX) and even log in to your Microsoft 365 workspace.

The latter is aggravatingly slow, though, and there’s also annoying lag on the wireless connections to your PC and phone, so you’ll reach for the Thunderbolt cable where possible. And at this point, finally, it becomes a normal monitor. Albeit one with a 5K (5,120 x 2,880) resolution, which



gives a quite stunning 218ppi density. Overkill, but photographers will love the detail, and it makes the 109ppi of a 1440p 27in screen feel distinctly average.

At this price we expected mini-LED technology, but IPS is in place as usual. It’s an 8-bit panel with FRC, giving 1.07 billion colours, but what will matter for professional users is that it comes pre-calibrated for sRGB and DCI-P3. Not Adobe RGB, though, which is a surprise as

the ViewFinity S9 lists Pantone validation among its many features.

There are also two slots available in the OSD for hardware calibration via recent Samsung phones. Using the Smart Things app, you can opt for a simple 30-second calibration for basic colours and brightness, or complete a ten-minute “professional” calibration to either the sRGB or DCI-P3 colour spaces. The result was little better than the pre-calibrated versions, but could be useful if the colours drift over the years.

Most of the time, though, you’ll find the default “Eco” mode does the job, which uses the panel’s native colour profile and covers 99% of the DCI-P3 space. We’re not sure “Eco” is the correct term, however, as this is the most power-intensive 27in display here, consuming 42W at 200cd/m²

ABOVE A detachable 4K webcam can be attached to the top of the stylish S9

LEFT A 5K resolution makes everything look incredibly detailed

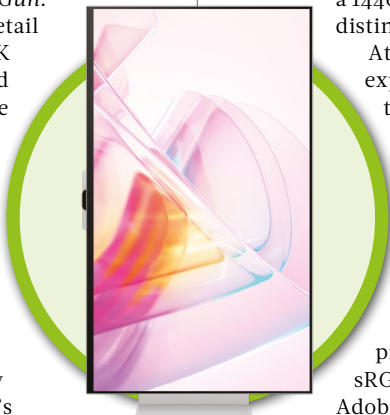
BELOW The stand offers a limited amount of tilt

and 61W at its peak 629cd/m². Films benefit from even higher peaks thanks to support for HDR.

The monitor itself looks stunning. Its thin bezels and stylish finish remind us of Apple’s Studio Display, and while we would have liked more tilt than 15° back and 2° forward, at least it includes 120mm of height adjustment. Only an ambient light sensor interrupts the clean lines of the front display, with the traditional OSD controls tucked next to a sprinkling of connectors at the rear: a miniDisplayPort, one USB-C input (complete with Thunderbolt 4 support), and three USB-C connectors for peripherals. The main USB-C port delivers 98W of power but the others a miserly 4.5W, which is surprising when you consider the gigantic power brick – think cigar case – that you’ll want to hide under your desk.

There’s one final bonus here: a 4K webcam. It comes with a privacy cover, albeit one that’s easy to lose, but for ultimate privacy simply disconnect it. The slimline unit attaches magnetically to the rear of the panel via pogo pins, so you can chuck it in a drawer when not in use. When it’s time for calls, its superb detail capture will surely impress.

Whether it’s great enough to justify the price is a different matter. If it included mini-LED technology we could understand the £999 tag, but the S9 – while a lovely monitor – only makes sense for those with money to spare and the need for a 5K work screen during the day and an entertainment centre at night.





How we test

Details of the exhaustive procedures through which we put each screen

As with all our testing, where possible we use a mix of real-world and technical tests to determine the quality of our products. Here, that means using each monitor as our daily work screen to see not just how enjoyable it is to look at but its usability: how intuitive is the on-screen display, how well engineered is the stand, how convenient are the ports?

We also explore the OSD in depth to see what options it provides users. In particular, we will praise screens that allow people to switch between colour profiles – say from sRGB to DCI-P3. But only if that switch is effective, which is where our technical tests come in.

These use an X-Rite i1 Display Pro colorimeter in tandem with the display calibration and profiling software, DisplayCal. We measure each display's maximum brightness in cd/m², its contrast ratio and colour temperature, and each panel's colour gamut as a percentage of the sRGB, DCI-P3 and Adobe RGB gamuts. We take these measurements in the default setting (as supplied), and in those colour profiles if available.

We also test the evenness of the LED backlights by measuring brightness and contrast across 25 points on the screen. In addition, we test each monitor's colour accuracy (using the sRGB profile if available) from a central point on the screen. This process measures how close the display colours are to their intended shade. The difference is measured in the unit of colour difference, Delta E: the higher the figure, the poorer the match.

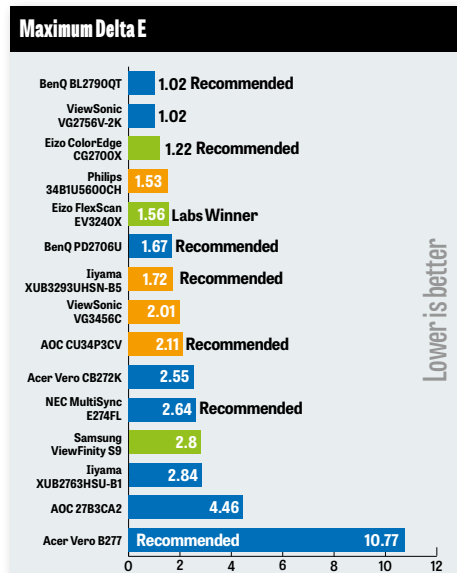
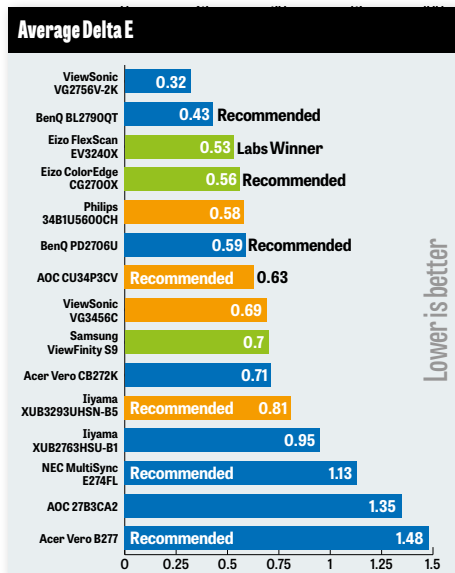
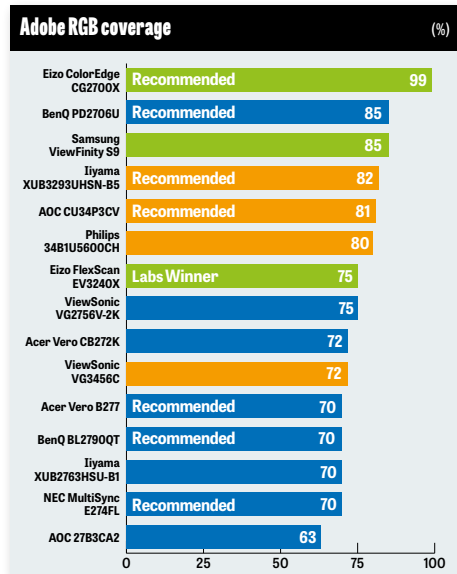
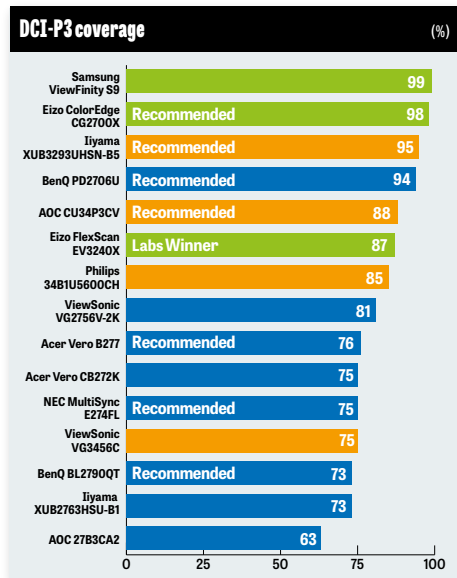
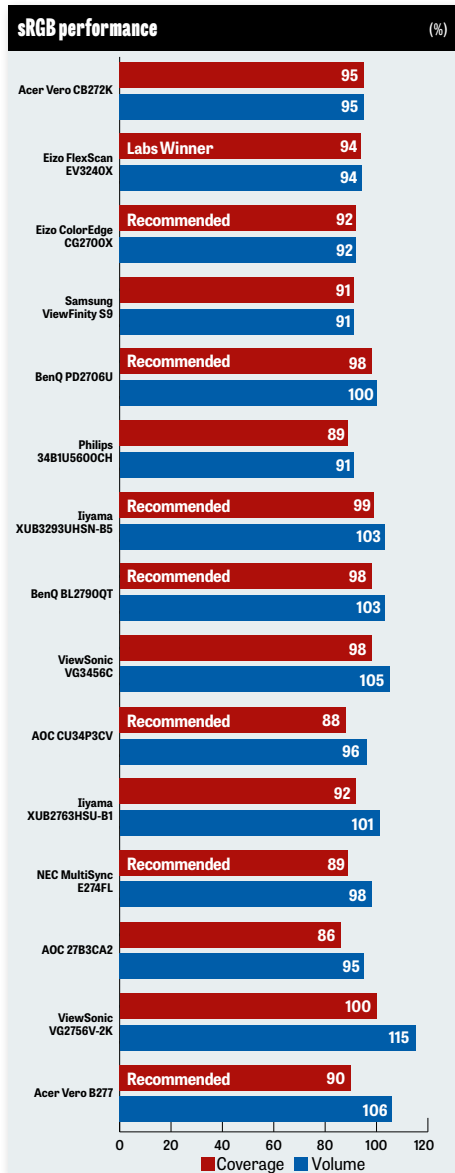
Finally, we check the power consumption of each monitor at 200cd/m² and at its peak brightness.

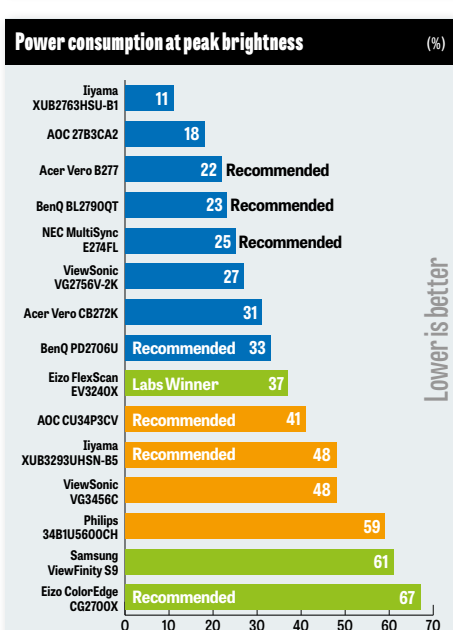
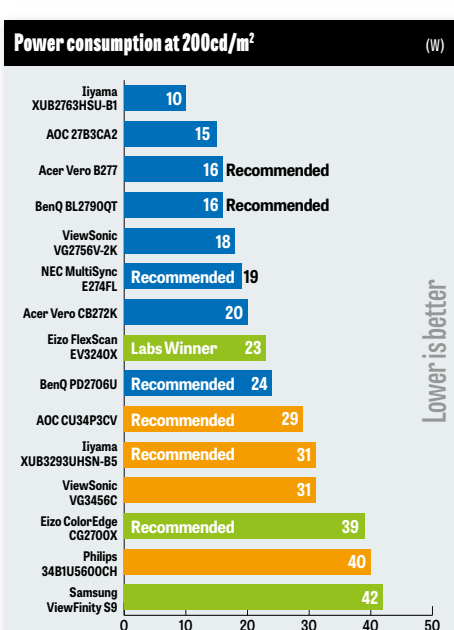
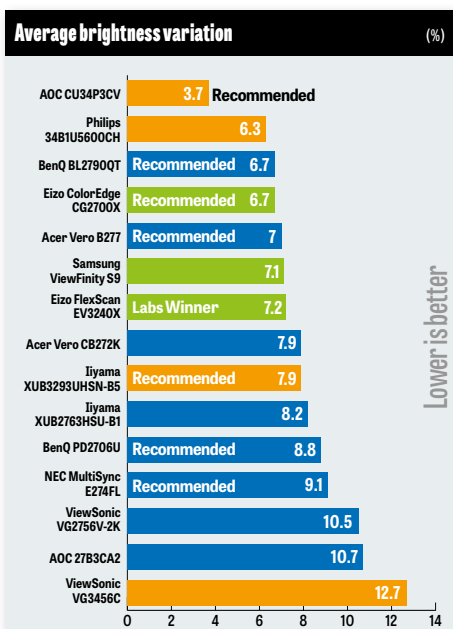
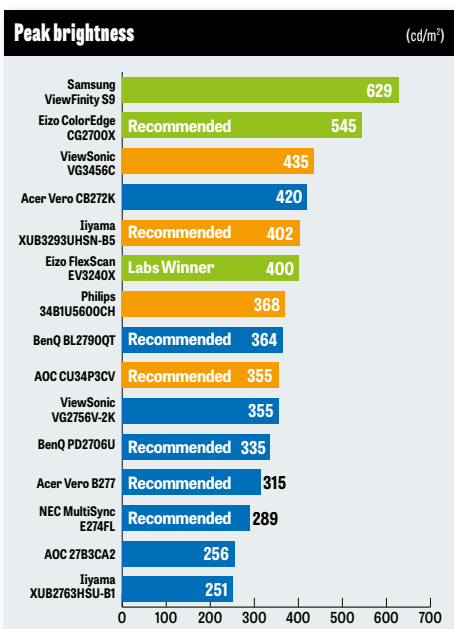
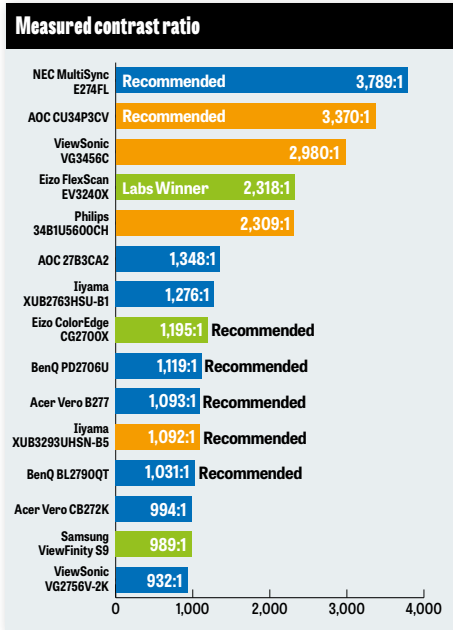
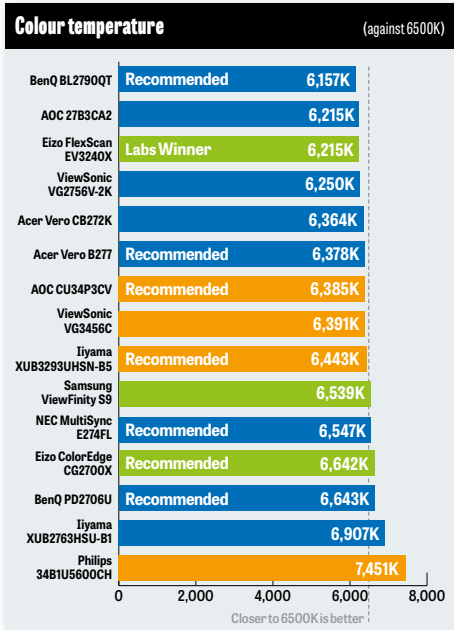


ABOVE An X-Rite i1 Display Pro colorimeter helps us determine a display's image quality

Quality test results

COLOUR TESTING Note that colour space testing was performed in the monitor's relevant mode (such as sRGB or DCI-P3) if available. If not, we used a 6500K colour temperature. If that wasn't available, we used the default mode. The ideal is for a monitor to achieve 100% sRGB coverage and 100% volume: a big difference between the two values shows the panel isn't tuned to that colour space.





View from the Labs

Much as I love testing screens, sometimes it's hard to say goodbye

I'm in a privileged position. For some reason tucked deep into my psyche, I love testing new monitors. In this Labs, I've tested 15 very different blighters, and apart from unpacking and packing them (let's not talk about my back), it's been a pleasure.

That's partly because they're all so good. I don't think you would be disappointed if you plucked one at random. Sure, some have better image quality than others, but use them in isolation and they all look great.

The downside of this, from a manufacturer's point of view, is they have fewer weapons to make their screens stand out. I used to see differentiation via the ports. Primarily through USB-C: cheaper monitors never used to include this handy connector, but now it's almost ubiquitous. Almost, but not quite, with three holdouts here. And that makes sense, because not everyone will actually use USB-C, so why pay extra for it?

I can only assume that RJ45 ports, and the associated electronics, have massively reduced in cost. Over half the tested monitors include one this month, and that's a huge change. Three of the monitors include a webcam, too, but I suggest you don't get too excited. A standalone £50 webcam will do a far better job. The same is true of the bundled speakers, too, I'm sorry to say.

I've also noticed another rule-of-thumb disappear. I used to be able to tell whether a panel used VA or IPS tech with a single and dare I say skilful glance – the whites were a particular giveaway. But, just as contrast ratio used to be a great proxy for image quality, you can no longer make quality judgements through such basic measures.

In fact, there's only one rule of thumb that still holds. The more you pay, the better the monitor you buy. Nowhere is this more true than the pair of Eizo screens I tested this month, which blew my little socks off for very different reasons (as discussed in their reviews).

That's bad news for me. I only had the FlexScan EV3240X for three weeks of testing, and may have shed a tear as it was driven away. Maybe I'm not in such a privileged position after all. ●

 Tim Danton is editor-in-chief of *PC Pro*, but could quite happily spend all his time testing monitors.

[@timdanton](#)