

Table 5.16(k) Solar cooling loads for fast-response building with single clear glazing: Nottingham (53.0°N); unshaded type 1 glazing

| Date | Orientation | Solar cooling load at stated sun time / W·m ⁻² | | | | | | | | | | | Orientation |
|----------|-------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------------|
| | | 07:30 | 08:30 | 09:30 | 10:30 | 11:30 | 12:30 | 13:30 | 14:30 | 15:30 | 16:30 | 17:30 | |
| January | N | 6 | 6 | 12 | 25 | 34 | 39 | 40 | 36 | 29 | 23 | 8 | N |
| | NE | 6 | 6 | 12 | 25 | 34 | 39 | 40 | 37 | 29 | 25 | 8 | NE |
| | E | 15 | 16 | 34 | 184 | 180 | 90 | 49 | 46 | 39 | 32 | 18 | E |
| | SE | 49 | 49 | 73 | 319 | 435 | 429 | 366 | 259 | 130 | 64 | 51 | SE |
| | S | 71 | 71 | 92 | 287 | 444 | 523 | 556 | 546 | 451 | 88 | 73 | S |
| | SW | 50 | 51 | 59 | 90 | 186 | 309 | 419 | 500 | 488 | 69 | 53 | SW |
| | W | 15 | 16 | 22 | 35 | 43 | 50 | 63 | 162 | 243 | 32 | 18 | W |
| | NW | 6 | 6 | 12 | 25 | 34 | 39 | 40 | 36 | 29 | 21 | 8 | NW |
| Horiz. | 18 | 19 | 32 | 71 | 113 | 144 | 153 | 135 | 93 | 45 | 21 | Horiz. | |
| February | N | 10 | 14 | 32 | 46 | 55 | 65 | 70 | 65 | 52 | 38 | 24 | N |
| | NE | 11 | 16 | 43 | 46 | 55 | 66 | 70 | 65 | 53 | 38 | 25 | NE |
| | E | 26 | 34 | 125 | 282 | 245 | 131 | 85 | 80 | 68 | 53 | 40 | E |
| | SE | 62 | 71 | 178 | 439 | 527 | 509 | 419 | 289 | 150 | 89 | 76 | SE |
| | S | 94 | 100 | 172 | 377 | 525 | 611 | 631 | 603 | 523 | 389 | 210 | S |
| | SW | 76 | 79 | 98 | 122 | 223 | 368 | 488 | 568 | 592 | 527 | 312 | SW |
| | W | 37 | 40 | 58 | 72 | 81 | 92 | 106 | 219 | 335 | 376 | 253 | W |
| | NW | 12 | 15 | 33 | 47 | 57 | 67 | 71 | 66 | 54 | 47 | 69 | NW |
| Horiz. | 35 | 41 | 86 | 136 | 199 | 250 | 265 | 239 | 176 | 101 | 60 | Horiz. | |
| March | N | 17 | 38 | 60 | 71 | 73 | 74 | 73 | 73 | 69 | 56 | 46 | N |
| | NE | 19 | 50 | 92 | 69 | 74 | 75 | 74 | 75 | 70 | 57 | 48 | NE |
| | E | 40 | 92 | 308 | 347 | 293 | 145 | 95 | 95 | 91 | 78 | 68 | E |
| | SE | 76 | 127 | 372 | 500 | 593 | 558 | 447 | 268 | 139 | 115 | 105 | SE |
| | S | 105 | 139 | 274 | 412 | 572 | 665 | 696 | 600 | 484 | 414 | 237 | S |
| | SW | 89 | 110 | 131 | 151 | 239 | 403 | 555 | 598 | 587 | 629 | 408 | SW |
| | W | 50 | 72 | 93 | 104 | 106 | 109 | 122 | 256 | 378 | 503 | 374 | W |
| | NW | 20 | 41 | 62 | 73 | 75 | 76 | 76 | 76 | 73 | 75 | 131 | NW |
| Horiz. | 57 | 102 | 152 | 221 | 302 | 360 | 374 | 322 | 248 | 155 | 107 | Horiz. | |
| April | N | 46 | 71 | 87 | 97 | 90 | 94 | 100 | 93 | 83 | 74 | 70 | N |
| | NE | 65 | 168 | 134 | 118 | 95 | 99 | 105 | 99 | 88 | 80 | 76 | NE |
| | E | 91 | 294 | 351 | 214 | 313 | 153 | 124 | 117 | 107 | 98 | 94 | E |
| | SE | 111 | 290 | 385 | 271 | 585 | 499 | 333 | 211 | 131 | 122 | 119 | SE |
| | S | 117 | 180 | 258 | 255 | 543 | 590 | 520 | 507 | 460 | 344 | 179 | S |
| | SW | 156 | 181 | 196 | 214 | 273 | 423 | 499 | 601 | 684 | 662 | 384 | SW |
| | W | 148 | 174 | 189 | 200 | 192 | 199 | 219 | 358 | 533 | 623 | 418 | W |
| | NW | 89 | 115 | 130 | 141 | 133 | 137 | 143 | 136 | 119 | 136 | 227 | NW |
| Horiz. | 116 | 171 | 199 | 272 | 402 | 457 | 430 | 404 | 331 | 203 | 159 | Horiz. | |
| May | N | 93 | 101 | 112 | 121 | 126 | 128 | 127 | 122 | 114 | 104 | 93 | N |
| | NE | 282 | 280 | 186 | 137 | 144 | 147 | 146 | 140 | 133 | 123 | 111 | NE |
| | E | 378 | 473 | 482 | 429 | 318 | 197 | 174 | 168 | 161 | 151 | 139 | E |
| | SE | 293 | 406 | 475 | 504 | 479 | 413 | 314 | 203 | 167 | 157 | 145 | SE |
| | S | 133 | 173 | 260 | 349 | 415 | 451 | 453 | 426 | 361 | 267 | 167 | S |
| | SW | 173 | 188 | 200 | 210 | 242 | 353 | 455 | 534 | 575 | 566 | 521 | SW |
| | W | 191 | 207 | 218 | 226 | 232 | 237 | 248 | 374 | 511 | 601 | 641 | W |
| | NW | 145 | 160 | 172 | 180 | 185 | 188 | 187 | 181 | 170 | 201 | 332 | NW |
| Horiz. | 181 | 210 | 249 | 353 | 440 | 488 | 495 | 461 | 381 | 254 | 167 | Horiz. | |
| June | N | 101 | 106 | 116 | 124 | 131 | 134 | 131 | 127 | 121 | 113 | 103 | N |
| | NE | 339 | 299 | 202 | 147 | 154 | 157 | 154 | 150 | 144 | 136 | 125 | NE |
| | E | 438 | 478 | 501 | 445 | 332 | 211 | 182 | 178 | 172 | 164 | 153 | E |
| | SE | 315 | 392 | 471 | 496 | 466 | 402 | 312 | 202 | 173 | 164 | 154 | SE |
| | S | 130 | 154 | 236 | 322 | 384 | 418 | 432 | 403 | 338 | 250 | 159 | S |
| | SW | 166 | 181 | 191 | 199 | 214 | 320 | 424 | 501 | 535 | 528 | 476 | SW |
| | W | 179 | 194 | 204 | 212 | 219 | 224 | 229 | 350 | 479 | 563 | 588 | W |
| | NW | 136 | 152 | 162 | 169 | 176 | 180 | 177 | 172 | 163 | 193 | 319 | NW |
| Horiz. | 189 | 223 | 257 | 366 | 456 | 506 | 519 | 484 | 402 | 274 | 191 | Horiz. | |
| July | N | 93 | 100 | 113 | 123 | 129 | 131 | 130 | 127 | 120 | 112 | 101 | N |
| | NE | 278 | 274 | 191 | 145 | 147 | 149 | 148 | 145 | 138 | 130 | 119 | NE |
| | E | 362 | 443 | 458 | 415 | 324 | 206 | 174 | 171 | 165 | 157 | 146 | E |
| | SE | 276 | 373 | 442 | 470 | 463 | 413 | 325 | 216 | 170 | 162 | 151 | SE |
| | S | 127 | 158 | 238 | 319 | 388 | 433 | 445 | 416 | 355 | 267 | 177 | S |
| | SW | 157 | 173 | 186 | 197 | 215 | 319 | 420 | 493 | 527 | 510 | 447 | SW |
| | W | 164 | 181 | 194 | 203 | 209 | 212 | 217 | 329 | 451 | 520 | 525 | W |
| | NW | 125 | 141 | 155 | 164 | 170 | 172 | 171 | 167 | 156 | 184 | 283 | NW |
| Horiz. | 179 | 212 | 252 | 349 | 432 | 483 | 494 | 460 | 385 | 270 | 197 | Horiz. | |
| August | N | 63 | 79 | 93 | 105 | 113 | 116 | 114 | 111 | 108 | 97 | 78 | N |
| | NE | 265 | 220 | 155 | 117 | 126 | 129 | 127 | 123 | 121 | 110 | 91 | NE |
| | E | 383 | 398 | 441 | 389 | 294 | 185 | 154 | 151 | 148 | 137 | 118 | E |
| | SE | 306 | 367 | 463 | 486 | 468 | 420 | 338 | 229 | 164 | 153 | 133 | SE |
| | S | 118 | 179 | 273 | 357 | 420 | 462 | 478 | 446 | 351 | 263 | 200 | S |
| | SW | 123 | 142 | 155 | 171 | 218 | 324 | 424 | 490 | 462 | 416 | 448 | SW |
| | W | 110 | 128 | 142 | 154 | 163 | 168 | 176 | 283 | 362 | 389 | 483 | W |
| | NW | 78 | 97 | 111 | 123 | 131 | 134 | 132 | 128 | 124 | 147 | 224 | NW |
| Horiz. | 133 | 175 | 211 | 299 | 371 | 415 | 425 | 391 | 317 | 232 | 157 | Horiz. | |

Table continues

Table 5.16(k) Solar cooling loads for fast-response building with single clear glazing: Nottingham (53.0°N); unshaded type 1 glazing — *continued*

| Date | Orientation | Solar cooling load at stated sun time / W·m ⁻² | | | | | | | | | | Orientation | |
|-----------|-------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|-------|
| | | 07:30 | 08:30 | 09:30 | 10:30 | 11:30 | 12:30 | 13:30 | 14:30 | 15:30 | 16:30 | | 17:30 |
| September | N | 31 | 44 | 68 | 78 | 78 | 89 | 93 | 79 | 74 | 53 | 43 | N |
| | NE | 33 | 64 | 94 | 79 | 79 | 91 | 94 | 80 | 76 | 54 | 44 | NE |
| | E | 52 | 105 | 295 | 313 | 264 | 130 | 112 | 98 | 93 | 72 | 62 | E |
| | SE | 77 | 131 | 357 | 458 | 558 | 393 | 265 | 218 | 116 | 98 | 87 | SE |
| | S | 103 | 138 | 270 | 393 | 559 | 487 | 403 | 526 | 391 | 419 | 277 | S |
| | SW | 101 | 114 | 138 | 158 | 258 | 341 | 365 | 560 | 501 | 717 | 647 | SW |
| | W | 75 | 88 | 111 | 122 | 122 | 136 | 166 | 277 | 361 | 616 | 655 | W |
| | NW | 36 | 50 | 73 | 83 | 84 | 95 | 98 | 84 | 81 | 89 | 207 | NW |
| Horiz. | 74 | 112 | 161 | 230 | 303 | 314 | 296 | 303 | 234 | 143 | 79 | Horiz. | |
| October | N | 11 | 28 | 39 | 50 | 56 | 58 | 57 | 52 | 45 | 33 | 18 | N |
| | NE | 12 | 30 | 53 | 51 | 56 | 58 | 57 | 53 | 45 | 33 | 19 | NE |
| | E | 30 | 66 | 309 | 295 | 203 | 93 | 75 | 71 | 63 | 51 | 37 | E |
| | SE | 66 | 107 | 427 | 509 | 515 | 466 | 358 | 223 | 111 | 88 | 73 | SE |
| | S | 90 | 123 | 327 | 456 | 549 | 607 | 604 | 541 | 412 | 214 | 97 | S |
| | SW | 66 | 82 | 98 | 136 | 256 | 398 | 502 | 546 | 491 | 267 | 73 | SW |
| | W | 28 | 46 | 56 | 67 | 73 | 80 | 105 | 232 | 303 | 195 | 35 | W |
| | NW | 12 | 29 | 40 | 50 | 56 | 58 | 57 | 53 | 46 | 42 | 18 | NW |
| Horiz. | 35 | 64 | 98 | 154 | 207 | 239 | 237 | 202 | 143 | 84 | 44 | Horiz. | |
| November | N | 6 | 8 | 21 | 29 | 36 | 39 | 39 | 33 | 24 | 16 | 6 | N |
| | NE | 6 | 8 | 21 | 29 | 36 | 39 | 39 | 33 | 24 | 18 | 6 | NE |
| | E | 15 | 18 | 46 | 223 | 156 | 65 | 49 | 42 | 33 | 26 | 15 | E |
| | SE | 48 | 51 | 90 | 422 | 444 | 382 | 345 | 207 | 98 | 58 | 48 | SE |
| | S | 73 | 76 | 111 | 394 | 487 | 508 | 585 | 499 | 407 | 83 | 73 | S |
| | SW | 53 | 56 | 73 | 115 | 227 | 334 | 477 | 491 | 471 | 66 | 53 | SW |
| | W | 17 | 20 | 33 | 40 | 47 | 56 | 82 | 187 | 259 | 28 | 17 | W |
| | NW | 6 | 9 | 22 | 29 | 36 | 39 | 39 | 33 | 23 | 15 | 6 | NW |
| Horiz. | 18 | 23 | 46 | 84 | 123 | 144 | 153 | 119 | 76 | 34 | 20 | Horiz. | |
| December | N | 4 | 4 | 8 | 24 | 29 | 35 | 36 | 28 | 18 | 10 | 4 | N |
| | NE | 4 | 4 | 8 | 23 | 29 | 35 | 36 | 28 | 18 | 10 | 4 | NE |
| | E | 7 | 7 | 10 | 30 | 77 | 72 | 39 | 30 | 21 | 12 | 7 | E |
| | SE | 36 | 36 | 40 | 65 | 201 | 478 | 382 | 239 | 102 | 41 | 36 | SE |
| | S | 64 | 64 | 67 | 92 | 235 | 620 | 626 | 562 | 428 | 69 | 64 | S |
| | SW | 53 | 53 | 56 | 76 | 142 | 388 | 497 | 538 | 484 | 59 | 53 | SW |
| | W | 15 | 15 | 19 | 34 | 40 | 49 | 73 | 180 | 244 | 21 | 15 | W |
| | NW | 4 | 4 | 8 | 24 | 29 | 35 | 36 | 28 | 18 | 9 | 4 | NW |
| Horiz. | 14 | 14 | 20 | 49 | 80 | 132 | 136 | 103 | 59 | 22 | 14 | Horiz. | |

Air node correction factor: 0.85 (fast response); 0.82 (slow response)