

Table 5.17(h) Solar cooling loads for fast-response building with single clear glazing: Manchester (53.3°N); shaded 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 | 22 | 33 | 40 | 42 | 39 | 31 | 26 | 9 | N |
| | NE | 6 | 6 | 12 | 22 | 33 | 40 | 42 | 39 | 31 | 28 | 10 | NE |
| | E | 9 | 9 | 111 | 131 | 42 | 87 | 45 | 42 | 34 | 29 | 13 | E |
| | SE | 16 | 16 | 169 | 253 | 258 | 227 | 171 | 55 | 98 | 34 | 19 | SE |
| | S | 19 | 19 | 139 | 233 | 282 | 304 | 299 | 271 | 88 | 39 | 22 | S |
| | SW | 16 | 16 | 22 | 41 | 232 | 213 | 260 | 283 | 94 | 38 | 20 | SW |
| | W | 9 | 9 | 16 | 25 | 36 | 43 | 47 | 220 | 50 | 29 | 13 | W |
| | NW | 6 | 6 | 13 | 22 | 33 | 40 | 42 | 39 | 31 | 24 | 9 | NW |
| Horiz. | 17 | 18 | 25 | 58 | 97 | 126 | 136 | 122 | 89 | 48 | 21 | Horiz. | |
| February | N | 12 | 15 | 31 | 45 | 65 | 83 | 87 | 76 | 58 | 42 | 27 | N |
| | NE | 13 | 16 | 51 | 46 | 66 | 84 | 87 | 76 | 59 | 42 | 28 | NE |
| | E | 20 | 22 | 309 | 186 | 63 | 141 | 94 | 83 | 66 | 49 | 34 | E |
| | E | 21 | 114 | 250 | 306 | 288 | 245 | 188 | 63 | 112 | 50 | 35 | SE |
| | S | 27 | 30 | 269 | 272 | 306 | 316 | 314 | 287 | 221 | 76 | 96 | S |
| | SW | 24 | 27 | 42 | 57 | 265 | 232 | 281 | 308 | 284 | 95 | 151 | SW |
| | W | 20 | 23 | 38 | 53 | 73 | 91 | 95 | 281 | 200 | 73 | 136 | W |
| | NW | 13 | 16 | 31 | 46 | 66 | 84 | 87 | 77 | 59 | 45 | 50 | NW |
| Horiz. | 31 | 35 | 67 | 115 | 183 | 233 | 349 | 70 | 163 | 99 | 60 | Horiz. | |
| March | N | 19 | 39 | 56 | 72 | 87 | 98 | 100 | 94 | 78 | 65 | 49 | N |
| | NE | 22 | 78 | 100 | 71 | 89 | 100 | 102 | 97 | 81 | 67 | 51 | NE |
| | E | 26 | 287 | 262 | 226 | 77 | 153 | 107 | 102 | 86 | 72 | 56 | E |
| | SE | 29 | 294 | 326 | 355 | 334 | 280 | 202 | 70 | 105 | 75 | 59 | SE |
| | S | 35 | 77 | 365 | 306 | 352 | 369 | 357 | 306 | 228 | 83 | 108 | S |
| | SW | 31 | 51 | 68 | 84 | 292 | 272 | 331 | 347 | 315 | 108 | 168 | SW |
| | W | 24 | 44 | 61 | 77 | 92 | 103 | 197 | 208 | 244 | 88 | 161 | W |
| | NW | 21 | 41 | 58 | 73 | 88 | 99 | 101 | 96 | 80 | 74 | 83 | NW |
| Horiz. | 24 | 65 | 174 | 176 | 220 | 237 | 226 | 182 | 124 | 44 | 84 | Horiz. | |
| April | N | 57 | 71 | 87 | 105 | 115 | 127 | 127 | 123 | 113 | 96 | 76 | N |
| | NE | 189 | 70 | 146 | 106 | 118 | 130 | 130 | 126 | 116 | 99 | 79 | NE |
| | E | 285 | 301 | 293 | 234 | 85 | 166 | 134 | 129 | 119 | 102 | 83 | E |
| | SE | 245 | 294 | 339 | 335 | 308 | 253 | 93 | 196 | 121 | 104 | 85 | SE |
| | S | 61 | 123 | 368 | 280 | 319 | 331 | 317 | 282 | 225 | 87 | 160 | S |
| | SW | 60 | 80 | 96 | 114 | 283 | 263 | 318 | 350 | 353 | 321 | 240 | SW |
| | W | 59 | 79 | 95 | 113 | 123 | 135 | 241 | 250 | 313 | 338 | 294 | W |
| | NW | 53 | 73 | 89 | 107 | 117 | 130 | 130 | 125 | 105 | 207 | 178 | NW |
| Horiz. | 79 | 163 | 170 | 230 | 278 | 295 | 282 | 244 | 179 | 106 | 48 | Horiz. | |
| May | N | 84 | 89 | 97 | 102 | 105 | 108 | 107 | 105 | 100 | 95 | 89 | N |
| | NE | 276 | 151 | 61 | 99 | 106 | 108 | 108 | 105 | 101 | 96 | 89 | NE |
| | E | 379 | 321 | 320 | 254 | 94 | 150 | 115 | 112 | 108 | 103 | 97 | E |
| | SE | 298 | 296 | 348 | 351 | 312 | 243 | 93 | 157 | 109 | 104 | 97 | SE |
| | S | 81 | 113 | 336 | 274 | 313 | 326 | 310 | 267 | 200 | 80 | 128 | S |
| | SW | 84 | 100 | 108 | 113 | 246 | 262 | 329 | 365 | 359 | 304 | 224 | SW |
| | W | 87 | 103 | 111 | 116 | 119 | 122 | 227 | 275 | 344 | 346 | 291 | W |
| | NW | 78 | 94 | 102 | 106 | 110 | 113 | 112 | 110 | 138 | 157 | 194 | NW |
| Horiz. | 177 | 125 | 186 | 260 | 311 | 330 | 315 | 267 | 192 | 122 | 61 | Horiz. | |
| June | N | 99 | 101 | 109 | 118 | 123 | 126 | 127 | 134 | 122 | 112 | 102 | N |
| | NE | 236 | 190 | 88 | 131 | 137 | 140 | 141 | 148 | 136 | 126 | 116 | NE |
| | E | 329 | 362 | 339 | 272 | 118 | 183 | 149 | 156 | 144 | 134 | 124 | E |
| | SE | 385 | 307 | 336 | 330 | 295 | 236 | 99 | 168 | 130 | 120 | 110 | SE |
| | S | 88 | 99 | 299 | 245 | 279 | 291 | 259 | 232 | 97 | 215 | 126 | S |
| | SW | 103 | 116 | 125 | 133 | 133 | 387 | 281 | 323 | 343 | 322 | 258 | SW |
| | W | 116 | 129 | 138 | 146 | 152 | 155 | 147 | 408 | 346 | 381 | 351 | W |
| | NW | 105 | 118 | 127 | 135 | 141 | 144 | 145 | 152 | 176 | 189 | 242 | NW |
| Horiz. | 173 | 126 | 191 | 263 | 311 | 329 | 303 | 267 | 202 | 125 | 106 | Horiz. | |
| July | N | 84 | 89 | 101 | 110 | 117 | 120 | 120 | 119 | 115 | 107 | 96 | N |
| | NE | 248 | 190 | 90 | 134 | 140 | 143 | 143 | 142 | 138 | 129 | 118 | NE |
| | E | 355 | 366 | 340 | 277 | 123 | 194 | 153 | 152 | 148 | 139 | 129 | E |
| | SE | 264 | 314 | 342 | 337 | 308 | 253 | 108 | 188 | 134 | 125 | 115 | SE |
| | S | 81 | 100 | 306 | 248 | 285 | 300 | 288 | 252 | 100 | 231 | 144 | S |
| | SW | 94 | 108 | 120 | 129 | 135 | 389 | 303 | 334 | 339 | 317 | 262 | SW |
| | W | 93 | 107 | 119 | 128 | 135 | 138 | 226 | 251 | 315 | 348 | 331 | W |
| | NW | 86 | 99 | 111 | 121 | 128 | 130 | 131 | 129 | 117 | 230 | 220 | NW |
| Horiz. | 151 | 123 | 185 | 251 | 298 | 315 | 303 | 262 | 198 | 126 | 63 | Horiz. | |
| August | N | 46 | 70 | 83 | 92 | 98 | 104 | 101 | 97 | 91 | 84 | 75 | N |
| | NE | 54 | 143 | 142 | 95 | 102 | 108 | 105 | 101 | 95 | 88 | 79 | NE |
| | E | 60 | 391 | 280 | 232 | 84 | 150 | 109 | 104 | 99 | 92 | 83 | E |
| | SE | 62 | 370 | 322 | 336 | 300 | 250 | 94 | 191 | 103 | 96 | 86 | SE |
| | S | 58 | 105 | 339 | 274 | 304 | 328 | 327 | 288 | 223 | 86 | 151 | S |
| | SW | 67 | 91 | 104 | 113 | 259 | 263 | 332 | 366 | 358 | 292 | 111 | SW |
| | W | 51 | 75 | 88 | 97 | 103 | 109 | 200 | 236 | 298 | 286 | 210 | W |
| | NW | 56 | 81 | 94 | 103 | 109 | 115 | 111 | 107 | 91 | 185 | 67 | NW |
| Horiz. | 72 | 182 | 161 | 218 | 256 | 277 | 269 | 229 | 167 | 64 | 121 | Horiz. | |

Table continues

Table 5.17(h) Solar cooling loads for fast-response building with single clear glazing: Manchester (53.3°N); shaded 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 | 30 | 45 | 61 | 76 | 85 | 93 | 93 | 87 | 78 | 63 | 47 | N |
| | NE | 35 | 131 | 94 | 79 | 89 | 96 | 96 | 91 | 82 | 67 | 51 | NE |
| | E | 159 | 200 | 240 | 202 | 67 | 126 | 97 | 92 | 82 | 68 | 52 | E |
| | SE | 157 | 216 | 316 | 336 | 307 | 250 | 87 | 191 | 87 | 74 | 58 | SE |
| | S | 49 | 122 | 363 | 304 | 341 | 350 | 333 | 298 | 238 | 89 | 183 | S |
| | SW | 44 | 58 | 74 | 82 | 308 | 272 | 322 | 354 | 350 | 327 | 114 | SW |
| | W | 38 | 51 | 67 | 82 | 91 | 99 | 203 | 225 | 284 | 318 | 111 | W |
| | NW | 32 | 46 | 62 | 77 | 86 | 94 | 94 | 88 | 79 | 154 | 48 | NW |
| Horiz. | 40 | 73 | 191 | 175 | 212 | 224 | 210 | 176 | 123 | 44 | 67 | Horiz. | |
| October | N | 11 | 26 | 37 | 49 | 60 | 65 | 63 | 57 | 47 | 54 | 22 | N |
| | NE | 12 | 27 | 51 | 50 | 60 | 65 | 64 | 57 | 47 | 54 | 24 | NE |
| | E | 17 | 135 | 57 | 268 | 55 | 92 | 69 | 62 | 52 | 59 | 29 | E |
| | SE | 22 | 164 | 195 | 293 | 306 | 242 | 79 | 171 | 73 | 65 | 33 | SE |
| | S | 28 | 43 | 281 | 289 | 358 | 356 | 318 | 265 | 232 | 84 | 38 | S |
| | SW | 22 | 37 | 48 | 161 | 209 | 275 | 303 | 306 | 328 | 112 | 34 | SW |
| | W | 15 | 32 | 41 | 53 | 63 | 68 | 165 | 179 | 253 | 89 | 27 | W |
| | NW | 12 | 29 | 38 | 50 | 60 | 66 | 64 | 57 | 48 | 74 | 22 | NW |
| Horiz. | 20 | 37 | 69 | 198 | 157 | 161 | 142 | 50 | 124 | 114 | 29 | Horiz. | |
| November | N | 6 | 6 | 19 | 26 | 36 | 40 | 40 | 34 | 25 | 16 | 6 | N |
| | NE | 6 | 6 | 18 | 26 | 36 | 40 | 40 | 34 | 25 | 17 | 6 | NE |
| | E | 11 | 11 | 128 | 52 | 145 | 67 | 45 | 39 | 30 | 21 | 11 | E |
| | SE | 18 | 18 | 209 | 268 | 248 | 204 | 66 | 157 | 67 | 26 | 18 | SE |
| | S | 19 | 19 | 182 | 262 | 291 | 296 | 275 | 231 | 76 | 29 | 19 | S |
| | SW | 17 | 17 | 29 | 59 | 280 | 228 | 258 | 260 | 87 | 28 | 17 | SW |
| | W | 10 | 10 | 24 | 31 | 40 | 45 | 56 | 234 | 50 | 20 | 10 | W |
| | NW | 6 | 6 | 20 | 26 | 36 | 40 | 40 | 34 | 25 | 15 | 6 | NW |
| Horiz. | 18 | 19 | 33 | 70 | 107 | 129 | 129 | 107 | 71 | 32 | 17 | Horiz. | |
| December | N | 4 | 4 | 8 | 23 | 29 | 35 | 31 | 27 | 19 | 10 | 4 | N |
| | NE | 4 | 4 | 8 | 21 | 29 | 35 | 31 | 27 | 19 | 11 | 4 | NE |
| | E | 9 | 9 | 13 | 26 | 162 | 75 | 36 | 32 | 24 | 15 | 9 | E |
| | SE | 14 | 14 | 18 | 231 | 270 | 185 | 54 | 142 | 55 | 19 | 14 | SE |
| | S | 18 | 18 | 21 | 233 | 310 | 255 | 225 | 77 | 170 | 24 | 18 | S |
| | SW | 13 | 13 | 16 | 30 | 276 | 182 | 201 | 161 | 50 | 19 | 13 | SW |
| | W | 9 | 9 | 12 | 26 | 34 | 40 | 42 | 98 | 106 | 15 | 9 | W |
| | NW | 5 | 5 | 8 | 24 | 29 | 35 | 31 | 27 | 19 | 10 | 5 | NW |
| Horiz. | 12 | 13 | 16 | 41 | 85 | 109 | 92 | 79 | 49 | 21 | 12 | Horiz. | |
| Air node correction factor | | Fast response | | Slow response | | | | | | | | | |
| Internal blind | | 0.90 | | 0.88 | | | | | | | | | |
| Mid-pane blind | | 0.86 | | 0.82 | | | | | | | | | |
| External blind | | 0.87 | | 0.84 | | | | | | | | | |