

Locations used

The 8 French towns used are representative of the **RT 2005 climatic** zones. The other towns (8 in Europe and 8 outside Europe) are representative of various climatic zones.

The calculations are based on hour-by-hour weather data for each zone (external temperature, direct horizontal radiation, diffuse horizontal radiation).

Average values of these weather data are indicated in the table below.

• Weather data for the French towns

Summer average weather data

Towns		Trappes	Nancy	Mâcon	Rennes	La Rochelle	Agen	Carpentras	Nice	
RT2005 Zone		H1A	H1B	H1C	H2A	H2B	H2C	H2D	H3	
Average external T° (°C)	24-hour period	16,5	16,2	17,9	16,2	18,3	19,0	19,9	22,3	
	Duration of occupancy (7h00-19h00)	17,5	17,8	19,3	17,0	19,7	21,3	21,8	23,2	
Average radiation (W/m²)	East	Global	189	177	192	184	292	283	221	192
		Direct	56	58	75	59	170	160	98	68
	North-West	Global	163	161	168	166	136	138	198	183
		Direct	29	43	51	41	15	14	75	59
	West	Global	202	213	227	218	169	164	276	250
		Direct	69	94	110	93	47	40	153	125
	South	Global	219	214	232	224	241	219	259	245
		Direct	86	95	115	99	119	95	136	121

Winter average weather data

Towns		Trappes	Nancy	Mâcon	Rennes	La Rochelle	Agen	Carpentras	Nice	
RT2005 Zone		H1A	H1B	H1C	H2A	H2B	H2C	H2D	H3	
Average external T° (°C)	24-hour period	6,7	6,0	6,9	7,7	9,3	8,6	9,4	12,1	
	Duration of occupancy (7h00-19h00)	7,5	7,1	7,8	8,6	10,4	10,2	11,1	13,2	
Average radiation (W/m²)	East	Global	86	86	90	94	147	139	119	110
		Direct	22	24	25	28	84	73	45	32
	North-West	Global	75	75	79	78	67	69	94	94
		Direct	11	13	14	12	4	3	19	15
	West	Global	102	104	111	110	82	82	149	142
		Direct	38	13	46	44	19	15	75	63
	South	Global	136	138	149	156	175	161	220	207
		Direct	72	77	84	90	112	95	145	129

• **Weather data for other European towns**

Summer average weather data

European towns		Moscow	Vienna	Berlin	Stockholm	Brussels	London	Madrid	Roma	
Average external T° (°C)	24-hour period	16,3	19,7	17,0	16,4	17,1	17,6	24,4	24,6	
	Duration of occupancy (7h00-19h00)	17,7	20,7	18,5	17,6	17,8	18,9	25,1	25,9	
Average radiation (W/m²)	East	Global	210	212	207	222	178	180	270	261
		Direct	97	85	88	109	61	66	151	126
	North-West	Global	142	157	141	141	133	145	154	183
		Direct	29	30	22	28	16	30	35	49
	West	Global	186	198	180	190	163	179	209	241
		Direct	74	71	60	77	46	65	91	106
	South	Global	220	215	214	235	184	186	235	245
		Direct	107	88	94	122	67	72	117	110

Winter average weather data

European towns		Moscow	Vienna	Berlin	Stockholm	Brussels	London	Madrid	Roma	
Average external T° (°C)	24-hour period	0,6	7,3	5,3	3,1	7,7	9,2	11,0	13,5	
	Duration of occupancy (7h00-19h00)	1,6	8,1	6,6	4,1	8,3	10,2	12,0	15,0	
Average radiation (W/m²)	East	Global	86	102	92	86	88	83	154	149
		Direct	35	36	35	39	30	25	72	65
	North-West	Global	61	76	66	61	65	65	99	100
		Direct	10	11	9	14	8	8	17	16
	West	Global	88	106	91	96	86	86	149	147
		Direct	37	41	34	50	28	29	67	63
	South	Global	136	149	132	147	123	122	228	228
		Direct	85	94	75	100	65	65	146	144

• **Weather data for towns outside Europe**

Summer average weather data

Towns outside Europe		New York	Mexico	Sao Paulo	Cape Town	Dubai	Delhi	Shanghai	Melbourne	
Average external T° (°C)	24-hour period	22,8	17,6	22,3	18,8	34,0	30,0	26,5	18,3	
	Duration of occupancy (7h00-19h00)	24,3	18,5	23,7	21,2	36,2	32,2	27,8	20,8	
Average radiation (W/m²)	East	Global	236	196	216	319	252	240	185	261
		Direct	102	72	81	176	101	97	45	121
	North	Global	-	-	142	216	-	-	-	224
		Direct	-	-	7	73	-	-	-	84
	North-West	Global	177	163	-	-	219	195	168	-
		Direct	43	39	-	-	68	51	28	-
	West	Global	218	179	194	311	256	242	187	245
		Direct	85	55	59	168	105	98	47	106
	South	Global	214	139	-	-	191	222	167	-
		Direct	81	15	-	-	40	78	27	-
	South-West	Global	-	-	180	249	-	-	-	196
		Direct	-	-	45	106	-	-	-	56

Winter average weather data

Towns outside Europe		New York	Mexico	Sao Paulo	Cape Town	Dubai	Delhi	Shanghai	Melbourne	
Average external T° (°C)	24-hour period	7,7	16,1	19,1	16,0	25,4	17,4	12,5	11,6	
	Duration of occupancy (7h00-19h00)	9,3	18,0	20,9	17,9	27,4	19,9	13,8	13,9	
Average radiation (W/m²)	East	Global	135	201	157	186	209	184	131	149
		Direct	54	87	57	102	96	102	32	65
	North	Global	-	-	200	290	-	-	-	216
		Direct	-	-	100	205	-	-	-	132
	North-West	Global	97	144	-	-	143	98	108	-
		Direct	15	30	-	-	30	16	9	-
	West	Global	139	194	157	183	206	186	134	147
		Direct	57	80	57	98	93	104	35	63
	South	Global	200	226	-	-	271	347	167	-
		Direct	119	12	-	-	158	265	69	-
	South-West	Global	-	-	116	108	-	-	-	101
		Direct	-	-	16	24	-	-	-	17

For the towns located in the Southern hemisphere, the aspects considered change (see paragraph below). Additionally, the seasons considered are those of the hemisphere concerned. For instance, the winter period for Melbourne corresponds to summer in the Northern hemisphere.