

# Jacksonville, Florida

# Awnings

Typical Year (TMY3) HDD65 1280 / CDD65 2566, Hot Year (2007) HDD65 860 / CDD65 2920

Tables 123-126 show the impact of awnings on a typical house in Jacksonville with different window orientations over a typical year. Tables 127-130 repeat this analysis for a hot year in Jacksonville. The impact varies depending on the type of window glazing and whether the awnings are in place all twelve months or only during the cooling season. For a house with windows equally distributed in the four orientations, Table 123 shows the annual heating and cooling energy use as well as the peak electricity demand for each combination of glazing and shading condition. The table also shows the impact on the total cost for heating and cooling. In all cases, the net and percent savings are in reference to a house with no shading.

Table 123 shows that awnings reduce cooling energy use by 22-34 percent as compared to the unshaded house. The higher savings are for awnings at 165 degrees over windows with clear glazings, while the lower savings are for awnings at 90 degrees over windows with Low-E glazings. Because awnings block useful solar gain in winter, heating energy use increases when the awnings remain in place 12 months a year. Using the awnings only during the cooling season produces the largest net energy savings. The net energy savings are from 9 to 12 percent in Jacksonville when awnings are used only during the cooling season from February through December, while the savings are from 6 to 7 percent when they are deployed throughout the year.

Table 123 also shows that awnings reduce peak electricity demand by 12-19 percent in Jacksonville, with larger reductions for the clear glazings and smaller reductions for the Low-E glazing. Tables 124, 125, and 126 show results for houses in Jacksonville where the windows predominantly face to the east, south, and west, respectively. Both the cooling energy savings and the peak demand reductions are largest on west-facing awnings. Tables 127-130 show the impact of awnings on a particularly hot year (2007) in Jacksonville. The main effect is to increase the cooling savings by 18 percent due to the hotter or longer summer.

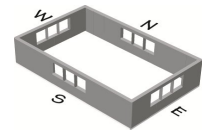


Table 123. Impact of awnings on a house in Jacksonville, Florida with equally distributed windows on a typical year

Window Type	Awning	Operation	Heating			Cooling				Heat+Cool			Peak Cooling		
			Energy (MBtu)	Savings (MBtu)	Savings (\$)	Cool (kWh)	Savings (kWh)	Savings (\$)	Savings (%)	Cost (\$)	Savings (\$)	Savings (%)	Peak (kW)	Savings (kW)	Savings (%)
Single Clear	None		15.8			5224				882			4.86		
	Black Awning	summer	18.8	-3.0	-64	3733	1491	158	29	788	94	11	4.07	0.79	16
	90°	12 month	20.3	-4.6	-95	3733	1491	158	29	820	62	7	4.07	0.79	16
	Linen Awning	summer	18.3	-2.5	-53	3926	1298	137	25	798	84	10	4.18	0.68	14
	90°	12 month	19.6	-3.8	-80	3926	1298	137	25	825	57	6	4.18	0.68	14
	Black Awning	summer	19.9	-4.1	-85	3453	1771	187	34	780	102	12	3.93	0.93	19
	165°	12 month	21.9	-6.1	-127	3453	1771	187	34	822	60	7	3.93	0.93	19
	Linen Awning	summer	19.0	-3.2	-67	3708	1516	160	29	788	94	11	4.07	0.80	16
165°	12 month	20.6	-4.8	-101	3708	1516	160	29	823	59	7	4.07	0.80	16	
Double Clear	None		12.1			4682				747			4.32		
	Black Awning	summer	14.5	-2.4	-51	3495	1187	126	25	672	75	10	3.70	0.62	14
	90°	12 month	15.8	-3.7	-77	3495	1187	126	25	699	48	6	3.70	0.62	14
	Linen Awning	summer	14.1	-2.0	-42	3653	1029	109	22	681	66	9	3.78	0.53	12
	90°	12 month	15.2	-3.1	-65	3653	1029	109	22	704	44	6	3.78	0.53	12
	Black Awning	summer	15.3	-3.2	-67	3265	1417	150	30	664	83	11	3.58	0.74	17
	165°	12 month	16.9	-4.9	-102	3265	1417	150	30	699	48	6	3.58	0.74	17
	Linen Awning	summer	14.6	-2.5	-53	3476	1206	128	26	673	75	10	3.69	0.63	15
165°	12 month	15.9	-3.9	-81	3476	1206	128	26	701	46	6	3.69	0.63	15	
Double HiSol LowE	None		10.3			4626				705			4.18		
	Black Awning	summer	12.6	-2.2	-47	3458	1168	124	25	628	77	11	3.57	0.60	14
	90°	12 month	13.8	-3.4	-72	3458	1168	124	25	654	52	7	3.57	0.60	14
	Linen Awning	summer	12.2	-1.9	-39	3612	1014	107	22	637	68	10	3.66	0.52	12
	90°	12 month	13.3	-2.9	-61	3612	1014	107	22	659	46	7	3.66	0.52	12
	Black Awning	summer	13.3	-3.0	-62	3231	1395	148	30	620	85	12	3.46	0.71	17
	165°	12 month	14.9	-4.6	-95	3231	1395	148	30	653	52	7	3.46	0.71	17
	Linen Awning	summer	12.7	-2.3	-49	3436	1190	126	26	629	77	11	3.57	0.61	15
165°	12 month	14.0	-3.6	-76	3436	1190	126	26	656	50	7	3.57	0.61	15	

Window Type	Frame	U-factor	SHGC
Single Clear	Aluminum	1.16	0.77
Double Clear	Wood/vinyl	0.49	0.56
Double HiSol LowE	Wood/vinyl	0.37	0.53

The costs shown here are annual costs for heating and cooling only and thus will be less than the total utility bill. Heating is assumed to be provided by a gas furnace and cooling by a central air-conditioner. Electricity costs used in the analysis are 10.6 cents per kWh and natural gas costs are \$21.54 per MBTU, which are the average costs in 2009 for the state of Florida according to the Energy Information Administration (see Appendix E for details).

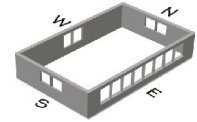


Table 124. Impact of awnings on a house in Jacksonville, Florida with east-facing windows on a typical year

Window Type	Awning	Operation	Heating			Cooling				Heat+Cool			Peak Cooling		
			Energy (MBtu)	Savings (MBtu)	Savings (\$)	Cool (kWh)	Savings (kWh)	Savings (\$)	Savings (%)	Cost (\$)	Savings (\$)	Savings (%)	Peak (kW)	Savings (kW)	Savings (%)
Single Clear	None		15.8			5516				913			4.77		
	Black Awning	summer	18.8	-3.0	-63	3734	1782	189	32	787	126	14	4.01	0.77	16
	90°	12 month	20.1	-4.4	-92	3734	1782	189	32	816	97	11	4.01	0.77	16
	Linen Awning	summer	18.3	-2.5	-53	3976	1540	163	28	803	110	12	4.11	0.66	14
	90°	12 month	19.5	-3.7	-78	3976	1540	163	28	828	85	9	4.11	0.66	14
	Black Awning	summer	20.1	-4.3	-91	3360	2156	228	39	776	137	15	3.86	0.92	19
	165°	12 month	21.9	-6.2	-129	3360	2156	228	39	814	99	11	3.86	0.92	19
	Linen Awning	summer	19.2	-3.4	-71	3685	1831	194	33	790	123	13	3.99	0.78	16
165°	12 month	20.6	-4.9	-102	3685	1831	194	33	821	92	10	3.99	0.78	16	
Double Clear	None		12.1			4975				778			4.28		
	Black Awning	summer	14.5	-2.5	-52	3505	1470	156	30	674	104	13	3.66	0.62	15
	90°	12 month	15.7	-3.6	-76	3505	1470	156	30	699	79	10	3.66	0.62	15
	Linen Awning	summer	14.1	-2.1	-43	3706	1269	134	26	687	91	12	3.74	0.54	13
	90°	12 month	15.1	-3.1	-65	3706	1269	134	26	708	70	9	3.74	0.54	13
	Black Awning	summer	15.6	-3.5	-74	3192	1783	189	36	663	115	15	3.54	0.75	17
	165°	12 month	17.1	-5.1	-106	3192	1783	189	36	696	83	11	3.54	0.75	17
	Linen Awning	summer	14.8	-2.8	-58	3465	1510	160	30	676	102	13	3.65	0.63	15
165°	12 month	16.1	-4.0	-84	3465	1510	160	30	703	75	10	3.65	0.63	15	
Double HiSol LowE	None		10.2			4905				733			4.14		
	Black Awning	summer	12.5	-2.3	-47	3464	1441	152	29	628	105	14	3.53	0.60	15
	90°	12 month	13.6	-3.4	-71	3464	1441	152	29	651	81	11	3.53	0.60	15
	Linen Awning	summer	12.2	-1.9	-40	3659	1246	132	25	641	92	13	3.62	0.52	13
	90°	12 month	13.1	-2.9	-61	3659	1246	132	25	662	71	10	3.62	0.52	13
	Black Awning	summer	13.5	-3.3	-68	3155	1750	185	36	616	117	16	3.42	0.72	17
	165°	12 month	15.0	-4.7	-99	3155	1750	185	36	647	86	12	3.42	0.72	17
	Linen Awning	summer	12.8	-2.5	-53	3422	1483	157	30	629	104	14	3.52	0.61	15
165°	12 month	14.0	-3.8	-78	3422	1483	157	30	654	79	11	3.52	0.61	15	

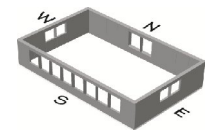


Table 125. Impact of awnings on a house in Jacksonville, Florida with south-facing windows on a typical year

Window Type	Awning	Operation	Heating			Cooling				Heat+Cool			Peak Cooling		
			Energy (MBtu)	Savings (MBtu)	Savings (\$)	Cool (kWh)	Savings (kWh)	Savings (\$)	Savings (%)	Cost (\$)	Savings (\$)	Savings (%)	Peak (kW)	Savings (kW)	Savings (%)
Single Clear	None		13.8			5075				826			4.62		
	Black Awning	summer	17.7	-3.9	-81	3547	1528	162	30	746	80	10	3.95	0.67	15
	90°	12 month	19.8	-5.9	-124	3547	1528	162	30	788	38	5	3.95	0.67	15
	Linen Awning	summer	16.9	-3.0	-64	3733	1342	142	26	748	78	9	4.04	0.58	13
	90°	12 month	18.5	-4.7	-98	3733	1342	142	26	782	44	5	4.04	0.58	13
	Black Awning	summer	19.1	-5.2	-109	3340	1735	184	34	752	74	9	3.81	0.81	18
	165°	12 month	22.0	-8.2	-170	3340	1735	184	34	813	13	2	3.81	0.81	18
	Linen Awning	summer	17.6	-3.8	-79	3578	1497	158	29	747	79	10	3.93	0.69	15
165°	12 month	19.8	-6.0	-126	3578	1497	158	29	793	33	4	3.93	0.69	15	
Double Clear	None		10.5			4564				703			4.11		
	Black Awning	summer	13.8	-3.3	-68	3335	1229	130	27	641	62	9	3.57	0.54	13
	90°	12 month	15.5	-5.0	-104	3335	1229	130	27	678	26	4	3.57	0.54	13
	Linen Awning	summer	13.1	-2.6	-54	3487	1077	114	24	643	60	9	3.65	0.46	11
	90°	12 month	14.6	-4.0	-84	3487	1077	114	24	673	30	4	3.65	0.46	11
	Black Awning	summer	14.8	-4.3	-89	3160	1404	149	31	644	59	8	3.46	0.65	16
	165°	12 month	17.3	-6.7	-141	3160	1404	149	31	695	8	1	3.46	0.65	16
	Linen Awning	summer	13.7	-3.2	-66	3354	1210	128	27	641	62	9	3.56	0.55	13
165°	12 month	15.6	-5.1	-106	3354	1210	128	27	681	23	3	3.56	0.55	13	
Double HiSol LowE	None		9.0			4504				664			3.98		
	Black Awning	summer	11.9	-2.9	-62	3298	1206	128	27	598	66	10	3.45	0.53	13
	90°	12 month	13.5	-4.6	-95	3298	1206	128	27	632	32	5	3.45	0.53	13
	Linen Awning	summer	11.3	-2.3	-48	3448	1056	112	23	600	63	10	3.52	0.46	12
	90°	12 month	12.6	-3.6	-76	3448	1056	112	23	628	36	5	3.52	0.46	12
	Black Awning	summer	12.9	-3.9	-82	3121	1383	146	31	599	65	10	3.34	0.64	16
	165°	12 month	15.2	-6.2	-130	3121	1383	146	31	647	16	2	3.34	0.64	16
	Linen Awning	summer	11.8	-2.9	-60	3314	1190	126	26	598	66	10	3.43	0.55	14
165°	12 month	13.6	-4.6	-97	3314	1190	126	26	635	29	4	3.43	0.55	14	

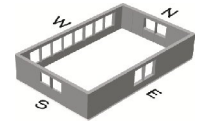


Table 126. Impact of awnings on a house in Jacksonville, Florida with west-facing windows on a typical year

Window Type	Awning	Operation	Heating			Cooling				Heat+Cool			Peak Cooling		
			Energy (MBtu)	Savings (MBtu)	Savings (\$)	Cool (kWh)	Savings (kWh)	Savings (\$)	Savings (%)	Cost (\$)	Savings (\$)	Savings (%)	Peak (kW)	Savings (kW)	Savings (%)
Single Clear	None		16.7			5443				925			5.37		
	Black Awning	summer	19.4	-2.6	-55	3723	1720	182	32	798	127	14	4.02	1.35	25
	90°	12 month	20.7	-3.9	-82	3723	1720	182	32	826	100	11	4.02	1.35	25
	Linen Awning	summer	18.9	-2.2	-46	3950	1493	158	27	813	112	12	4.17	1.20	22
	90°	12 month	20.0	-3.3	-69	3950	1493	158	27	836	89	10	4.17	1.20	22
	Black Awning	summer	20.5	-3.8	-78	3381	2062	218	38	786	140	15	3.87	1.50	28
	165°	12 month	22.2	-5.5	-115	3381	2062	218	38	822	103	11	3.87	1.50	28
	Linen Awning	summer	19.6	-2.9	-61	3684	1759	186	32	800	125	14	4.06	1.31	24
165°	12 month	21.1	-4.3	-91	3684	1759	186	32	830	95	10	4.06	1.31	24	
Double Clear	None		12.8			4911				787			4.73		
	Black Awning	summer	14.9	-2.1	-44	3492	1419	150	29	681	106	13	3.64	1.09	23
	90°	12 month	16.0	-3.2	-67	3492	1419	150	29	705	83	10	3.64	1.09	23
	Linen Awning	summer	14.6	-1.8	-37	3677	1234	131	25	693	94	12	3.77	0.96	20
	90°	12 month	15.5	-2.7	-57	3677	1234	131	25	713	74	9	3.77	0.96	20
	Black Awning	summer	15.8	-3.0	-63	3206	1705	180	35	670	118	15	3.52	1.21	26
	165°	12 month	17.3	-4.5	-94	3206	1705	180	35	701	86	11	3.52	1.21	26
	Linen Awning	summer	15.1	-2.3	-49	3460	1451	154	30	682	105	13	3.67	1.06	22
165°	12 month	16.4	-3.5	-74	3460	1451	154	30	708	79	10	3.67	1.06	22	
Double HiSol LowE	None		11.0			4840				741			4.58		
	Black Awning	summer	12.9	-1.9	-40	3450	1390	147	29	634	107	14	3.51	1.07	23
	90°	12 month	13.9	-3.0	-62	3450	1390	147	29	656	85	11	3.51	1.07	23
	Linen Awning	summer	12.6	-1.6	-33	3631	1209	128	25	647	94	13	3.64	0.94	21
	90°	12 month	13.5	-2.5	-53	3631	1209	128	25	666	75	10	3.64	0.94	21
	Black Awning	summer	13.7	-2.7	-57	3171	1669	177	34	622	119	16	3.40	1.19	26
	165°	12 month	15.1	-4.2	-87	3171	1669	177	34	652	89	12	3.40	1.19	26
	Linen Awning	summer	13.1	-2.1	-45	3418	1422	150	29	635	106	14	3.54	1.04	23
165°	12 month	14.3	-3.3	-69	3418	1422	150	29	660	82	11	3.54	1.04	23	

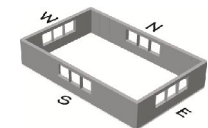


Table 127. Impact of awnings on a house in Jacksonville, Florida with equally distributed windows on a hot year

Window Type	Awning	Operation	Heating			Cooling				Heat+Cool			Peak Cooling		
			Energy (MBtu)	Savings (MBtu)	Savings (\$)	Cool (kWh)	Savings (kWh)	Savings (\$)	Savings (%)	Cost (\$)	Savings (\$)	Savings (%)	Peak (kW)	Savings (kW)	Savings (%)
Single Clear	None		7.9			6183				820			4.77		
	Black Awning	summer	10.1	-2.1	-45	4420	1763	187	29	678	142	17	4.05	0.72	15
	90°	12 month	11.3	-3.3	-69	4402	1781	188	29	701	119	15	4.05	0.72	15
	Linen Awning	summer	9.7	-1.8	-37	4658	1525	161	25	696	124	15	4.16	0.61	13
	90°	12 month	10.7	-2.8	-58	4642	1541	163	25	715	105	13	4.16	0.61	13
	Black Awning	summer	10.9	-3.0	-62	4031	2152	228	35	655	165	20	3.99	0.77	16
	165°	12 month	12.6	-4.7	-98	4010	2173	230	35	688	132	16	3.99	0.77	16
	Linen Awning	summer	10.3	-2.3	-49	4354	1829	194	30	675	145	18	4.12	0.65	14
165°	12 month	11.6	-3.7	-77	4336	1847	195	30	702	119	14	4.12	0.65	14	
Double Clear	None		5.9			5581				713			4.30		
	Black Awning	summer	7.6	-1.7	-36	4168	1413	149	25	600	114	16	3.73	0.58	13
	90°	12 month	8.5	-2.6	-55	4153	1428	151	26	617	96	13	3.73	0.58	13
	Linen Awning	summer	7.3	-1.4	-30	4360	1221	129	22	614	99	14	3.81	0.49	11
	90°	12 month	8.1	-2.2	-47	4347	1234	131	22	629	84	12	3.81	0.49	11
	Black Awning	summer	8.3	-2.4	-50	3853	1728	183	31	580	133	19	3.68	0.62	14
	165°	12 month	9.5	-3.7	-77	3836	1745	185	31	605	108	15	3.68	0.62	14
	Linen Awning	summer	7.7	-1.9	-39	4113	1468	155	26	597	116	16	3.78	0.52	12
165°	12 month	8.8	-2.9	-61	4098	1483	157	27	617	96	14	3.78	0.52	12	
Double HiSol LowE	None		4.9			5509				685			4.18		
	Black Awning	summer	6.5	-1.6	-33	4136	1373	145	25	572	112	16	3.62	0.56	13
	90°	12 month	7.3	-2.4	-50	4122	1387	147	25	588	96	14	3.62	0.56	13
	Linen Awning	summer	6.2	-1.3	-28	4320	1189	126	22	586	98	14	3.70	0.48	11
	90°	12 month	6.9	-2.0	-42	4307	1202	127	22	600	85	12	3.70	0.48	11
	Black Awning	summer	7.1	-2.2	-46	3833	1676	177	30	553	132	19	3.57	0.61	14
	165°	12 month	8.2	-3.4	-70	3816	1693	179	31	576	109	16	3.57	0.61	14
	Linen Awning	summer	6.6	-1.7	-36	4083	1426	151	26	570	115	17	3.67	0.51	12
165°	12 month	7.5	-2.6	-55	4068	1441	152	26	588	97	14	3.67	0.51	12	

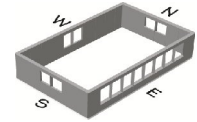


Table 128. Impact of awnings on a house in Jacksonville, Florida with east-facing windows on a hot year

Window Type	Awning	Operation	Heating			Cooling				Heat+Cool			Peak Cooling		
			Energy (MBtu)	Savings (MBtu)	Savings (\$)	Cool (kWh)	Savings (kWh)	Savings (\$)	Savings (%)	Cost (\$)	Savings (\$)	Savings (%)	Peak (kW)	Savings (kW)	Savings (%)
Single Clear	None		7.6			6569				853			4.64		
	Black Awning	summer	9.8	-2.2	-47	4445	2124	225	32	675	178	21	4.01	0.63	14
	90°	12 month	11.0	-3.4	-72	4429	2140	226	33	698	155	18	4.01	0.63	14
	Linen Awning	summer	9.4	-1.9	-39	4731	1838	194	28	697	156	18	4.09	0.56	12
	90°	12 month	10.4	-2.9	-60	4717	1852	196	28	717	136	16	4.09	0.56	12
	Black Awning	summer	11.2	-3.6	-75	3908	2661	282	41	647	206	24	3.93	0.72	15
	165°	12 month	12.9	-5.3	-111	3891	2678	283	41	681	172	20	3.93	0.72	15
	Linen Awning	summer	10.3	-2.8	-58	4316	2253	238	34	672	180	21	4.03	0.62	13
	165°	12 month	11.7	-4.2	-87	4300	2269	240	35	700	153	18	4.03	0.62	13
	Double Clear	None		5.5			5930				743			4.15	
Black Awning		summer	7.4	-1.9	-39	4189	1741	184	29	598	145	20	3.71	0.44	11
90°		12 month	8.3	-2.8	-58	4178	1752	185	30	616	127	17	3.71	0.44	11
Linen Awning		summer	7.1	-1.5	-32	4422	1508	160	25	616	127	17	3.77	0.38	9
90°		12 month	7.9	-2.3	-49	4412	1518	161	26	631	112	15	3.77	0.38	9
Black Awning		summer	8.5	-2.9	-61	3749	2181	231	37	574	169	23	3.64	0.51	12
165°		12 month	9.8	-4.3	-89	3736	2194	232	37	600	143	19	3.64	0.51	12
Linen Awning		summer	7.8	-2.3	-48	4084	1846	195	31	596	148	20	3.72	0.43	10
165°		12 month	8.9	-3.4	-70	4072	1858	197	31	617	127	17	3.72	0.43	10
Double HiSol LowE		None		4.5			5838				713			4.03	
	Black Awning	summer	6.2	-1.7	-35	4146	1692	179	29	569	144	20	3.59	0.43	11
	90°	12 month	7.0	-2.5	-52	4136	1702	180	29	585	128	18	3.59	0.43	11
	Linen Awning	summer	5.9	-1.4	-29	4372	1466	155	25	586	126	18	3.65	0.37	9
	90°	12 month	6.6	-2.1	-44	4362	1476	156	25	600	112	16	3.65	0.37	9
	Black Awning	summer	7.2	-2.7	-56	3723	2115	224	36	545	168	24	3.53	0.50	12
	165°	12 month	8.4	-3.9	-81	3709	2129	225	36	568	144	20	3.53	0.50	12
	Linen Awning	summer	6.6	-2.1	-43	4046	1792	190	31	566	147	21	3.60	0.42	10
	165°	12 month	7.6	-3.0	-63	4034	1804	191	31	585	128	18	3.60	0.42	10

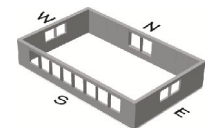


Table 129. Impact of awnings on a house in Jacksonville, Florida with south-facing windows on a hot year

Window Type	Awning	Operation	Heating			Cooling				Heat+Cool			Peak Cooling		
			Energy (MBtu)	Savings (MBtu)	Savings (\$)	Cool (kWh)	Savings (kWh)	Savings (\$)	Savings (%)	Cost (\$)	Savings (\$)	Savings (%)	Peak (kW)	Savings (kW)	Savings (%)
Single Clear	None		7.3			5892				775			4.25		
	Black Awning	summer	10.8	-3.5	-74	4137	1755	186	30	663	112	14	3.88	0.37	9
	90°	12 month	11.2	-3.9	-82	4137	1755	186	30	671	104	13	3.88	0.37	9
	Linen Awning	summer	10.0	-2.7	-57	4362	1530	162	26	670	105	14	3.93	0.32	7
	90°	12 month	10.3	-3.1	-64	4362	1530	162	26	677	98	13	3.93	0.32	7
	Black Awning	summer	12.1	-4.9	-102	3864	2028	215	34	662	113	15	3.83	0.42	10
	165°	12 month	12.7	-5.5	-114	3864	2028	215	34	675	100	13	3.83	0.42	10
	Linen Awning	summer	10.8	-3.6	-74	4156	1736	184	29	665	110	14	3.90	0.35	8
	165°	12 month	11.2	-4.0	-83	4156	1736	184	29	674	101	13	3.90	0.35	8
	Double Clear	None		5.3			5338				677			3.90	
Black Awning		summer	8.2	-2.9	-60	3922	1416	150	27	587	90	13	3.58	0.32	8
90°		12 month	8.5	-3.2	-66	3922	1416	150	27	593	84	12	3.58	0.32	8
Linen Awning		summer	7.6	-2.3	-47	4100	1238	131	23	593	84	12	3.62	0.27	7
90°		12 month	7.8	-2.5	-52	4100	1238	131	23	597	79	12	3.62	0.27	7
Black Awning		summer	9.3	-4.0	-83	3693	1645	174	31	585	91	13	3.54	0.36	9
165°		12 month	9.7	-4.4	-91	3693	1645	174	31	594	83	12	3.54	0.36	9
Linen Awning		summer	8.3	-2.9	-61	3929	1409	149	26	588	88	13	3.59	0.30	8
165°		12 month	8.6	-3.2	-67	3929	1409	149	26	595	82	12	3.59	0.30	8
Double HiSol LowE		None		4.4			5263				649			3.78	
	Black Awning	summer	7.0	-2.6	-54	3886	1377	146	26	557	92	14	3.47	0.31	8
	90°	12 month	7.2	-2.8	-59	3886	1377	146	26	562	87	13	3.47	0.31	8
	Linen Awning	summer	6.4	-2.0	-42	4059	1204	127	23	564	86	13	3.51	0.27	7
	90°	12 month	6.6	-2.2	-46	4059	1204	127	23	567	82	13	3.51	0.27	7
	Black Awning	summer	8.0	-3.6	-75	3664	1599	169	30	555	94	15	3.43	0.35	9
	165°	12 month	8.3	-3.9	-82	3664	1599	169	30	562	87	13	3.43	0.35	9
	Linen Awning	summer	7.0	-2.6	-54	3891	1372	145	26	558	91	14	3.48	0.30	8
	165°	12 month	7.3	-2.8	-60	3891	1372	145	26	564	86	13	3.48	0.30	8

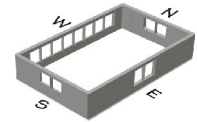


Table 130. Impact of awnings on a house in Jacksonville, Florida with west-facing windows on a hot year

Window Type	Awning	Operation	Heating			Cooling				Heat+Cool			Peak Cooling		
			Energy (MBtu)	Savings (MBtu)	Savings (\$)	Cool (kWh)	Savings (kWh)	Savings (\$)	Savings (%)	Cost (\$)	Savings (\$)	Savings (%)	Peak (kW)	Savings (kW)	Savings (%)
Single Clear	None		8.9			6478				872			6.15		
	Black Awning	summer	10.8	-1.8	-38	4374	2104	223	32	687	184	21	4.22	1.93	31
	90°	12 month	11.8	-2.8	-60	4362	2116	224	33	707	164	19	4.22	1.93	31
	Linen Awning	summer	10.4	-1.5	-31	4651	1827	193	28	710	162	19	4.51	1.64	27
	90°	12 month	11.3	-2.4	-50	4640	1838	194	28	727	145	17	4.51	1.64	27
	Black Awning	summer	11.7	-2.8	-58	3876	2602	275	40	655	217	25	3.89	2.26	37
	165°	12 month	13.2	-4.3	-90	3862	2616	277	40	685	187	21	3.89	2.26	37
	Linen Awning	summer	11.1	-2.2	-45	4273	2205	233	34	683	188	22	4.18	1.97	32
165°	12 month	12.3	-3.3	-70	4259	2219	235	34	707	165	19	4.18	1.97	32	
Double Clear	None		6.5			5826				753			5.36		
	Black Awning	summer	8.1	-1.5	-32	4126	1700	180	29	605	148	20	3.86	1.51	28
	90°	12 month	8.9	-2.3	-49	4116	1710	181	29	621	132	18	3.86	1.51	28
	Linen Awning	summer	7.8	-1.3	-27	4351	1475	156	25	623	129	17	4.09	1.27	24
	90°	12 month	8.5	-1.9	-41	4342	1484	157	25	636	116	15	4.09	1.27	24
	Black Awning	summer	8.8	-2.3	-48	3720	2106	223	36	578	175	23	3.60	1.77	33
	165°	12 month	10.0	-3.5	-72	3708	2118	224	36	601	152	20	3.60	1.77	33
	Linen Awning	summer	8.3	-1.8	-37	4039	1787	189	31	601	152	20	3.83	1.54	29
165°	12 month	9.2	-2.7	-57	4028	1798	190	31	619	134	18	3.83	1.54	29	
Double HiSol LowE	None		5.4			5732				720			5.21		
	Black Awning	summer	6.8	-1.4	-29	4082	1650	175	29	574	145	20	3.76	1.45	28
	90°	12 month	7.5	-2.1	-44	4073	1659	176	29	588	132	18	3.76	1.45	28
	Linen Awning	summer	6.6	-1.2	-24	4294	1438	152	25	592	128	18	3.99	1.22	23
	90°	12 month	7.2	-1.8	-37	4285	1447	153	25	603	117	16	3.99	1.22	23
	Black Awning	summer	7.5	-2.1	-44	3693	2039	216	36	548	172	24	3.48	1.73	33
	165°	12 month	8.6	-3.1	-66	3681	2051	217	36	568	151	21	3.48	1.73	33
	Linen Awning	summer	7.0	-1.6	-34	4001	1731	183	30	570	149	21	3.71	1.50	29
165°	12 month	7.9	-2.4	-51	3990	1742	184	30	586	133	19	3.71	1.50	29	