

Electrical Load Calculation for a  
Hot tub and Single-Family Dwelling  
Canadian Electrical Code (CEC) Rule 8-200

Subrule	Single Family Dwelling Address (SFD):	
	Area of home calculated from 8-110 in M <sup>2</sup>	M <sup>2</sup>
(1)(a)(i)	A basic load of 5000 W for the first 90 m <sup>2</sup> of living area (see Rule 8-110); plus	W
(1)(a)(ii)	an additional 1000 W for each 90 m <sup>2</sup> or portion thereof in excess of each 90 m <sup>2</sup> ; plus	W
1)(a)(iii)	any electric space-heating loads (Section 62); plus	W
(1)(a)(iii)	air-conditioning loads with a demand factor of 100%, "Rule 8-106(4)"; plus	W
1)(a)(iv)	(Single electric range: 6000 W + 40%-exceeds 12 kW; plus	W
1)(a)(v)	electric tankless water heaters or water heaters for steamers, swimming pools, hot tubs, or spas. 100%; plus	W
1)(a)(vi)	electric vehicle charging equipment loads. 100%; plus	W
(1)(a)(vii)	additional loads over 1500W: - if electric range provided take extra loads @25% or -if no electric range is provided, take additional loads @100% of nameplate, up to 6000W, then the balance at 25%	W
<b>Total calculated demand load</b>		<b>W</b> <b>A</b>
<b>Main breaker size:</b> <b>Meter base size:</b>		<b>Size &amp; Type of Service Conductors:</b> (AWG, Cu/Al)

\*Area in m<sup>2</sup>  
(1 square meter = 10.764 square feet)

\*Contractor to provide accurate m<sup>2</sup> as calculated per info from Building or Development permit, for the purpose of CEC Rule 8-110

To schedule inspection, call 780-743-7813 or email inspections@rmwb.ca

Use this table to detail other loads to be taken at 25%

Load over 1500W	Nameplate Watts	Watts at 25%
	W	W
	W	W
	W	W
<b>Total</b>		<b>W</b>

I have verified that the information contained within this document is correct.

<b>Electrical Master Name</b>	<b>Email Address</b>
<b>Master #</b>	<b>Phone #</b>
<b>Date</b>	<b>Signature</b>

- When the calculated demand determines that an increase of the service is required from a 60 amp, 100 amp, or 200 amp service you must contact ATCO at [electricftmcmurraysiterep@atco.cul.ca](mailto:electricftmcmurraysiterep@atco.cul.ca) to check if the increased service size is available

**Sample load calculation**  
(For instructional purposes)



**Safety Codes Branch  
Electrical Division**

Single Family Dwelling Electrical Permit  
**2026-ep-000000**

**Electrical Load Calculation for a  
Hot tub and Single Family Dwelling  
Canadian Electrical Code (CEC) Rule 8-200**

Subrule	Single Family Dwelling Address (SFD): <b>100 Fort McMurray Blvd</b>																				
Area of home calculated from 8-110 in M <sup>2</sup>		<b>185 M<sup>2</sup></b>	*Area in m <sup>2</sup> (1 square meter = 10.764 square feet)																		
(1)(a)(i)	A basic load of 5000 W for the first 90 m <sup>2</sup> of living area (see Rule 8-110); plus	<b>5000 W</b>	*Contractor to provide accurate m <sup>2</sup> as calculated per info from Building or Development permit, for the purpose of CEC Rule 8-110  To schedule inspection, call 780-743-7813 or email <a href="mailto:inspections@rmwb.ca">inspections@rmwb.ca</a>  Use this table to detail other loads to be taken at 25%																		
(1)(a)(ii)	an additional 1000 W for each 90 m <sup>2</sup> or portion thereof in excess of each 90 m <sup>2</sup> ; plus	<b>2000 W</b>																			
1)(a)(iii)	any electric space-heating loads (Section 62); plus	<b>1500 W</b>																			
(1)(a)(iii)	any AC "Rule 8-106(3)"	<b>3500 W</b>																			
1)(a)(iv)	(Single electric range: 6000 W + 40%-exceeds 12 kW; plus	<b>6000 W</b>																			
1)(a)(v)	electric tankless water heaters or water heaters for steamers, swimming pools, hot tubs, or spas. 100%; plus	<b>7500 W</b>																			
1)(a)(vi)	electric vehicle charging equipment loads. 100%; plus	<b>0 W</b>																			
(1)(a)(vii)	additional loads over 1500W: - if electric range is provided take extra loads @25% or -if no electric range is provided, take additional loads @100% of nameplate, up to 6000W, then the balance at 25%	<b>1875 W</b>																			
<b>Total calculated demand load</b>		<b>27375 W 114.1 A</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Load over 1500W</th> <th style="width: 30%;">Nameplate Watts</th> <th style="width: 40%;">Watts at 25%</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><b>Dryer</b></td> <td style="text-align: center;"><b>6000 W</b></td> <td style="text-align: center;"><b>1500 W</b></td> </tr> <tr> <td style="text-align: center;"><b>Hot tub pumps</b></td> <td style="text-align: center;"><b>1500 W</b></td> <td style="text-align: center;"><b>375 W</b></td> </tr> <tr> <td></td> <td style="text-align: center;">W</td> <td style="text-align: center;">W</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;"><b>Total</b></td> <td></td> <td style="text-align: center;"><b>1875 W</b></td> </tr> </tbody> </table>	Load over 1500W	Nameplate Watts	Watts at 25%	<b>Dryer</b>	<b>6000 W</b>	<b>1500 W</b>	<b>Hot tub pumps</b>	<b>1500 W</b>	<b>375 W</b>		W	W				<b>Total</b>		<b>1875 W</b>
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<b>Main breaker size: 125A Meter base size: 200A</b>		<b>Size &amp; Type of Service Conductors: #2/0 AL (AWG, Cu/Al)</b>																			

Notes:

1. A load shedding device can typically be used to reduce to total load by toggling the 2 heaviest loads on the same breaker.
2. An Electrical Vehicle Energy Management System (EVEMS) can be used to eliminate the entire hot tub load. See 8-500.
3. If either of the above options if used this must be noted on the permit application form in the description of work.
4. The greater load of heat and A/C can be used only if interlocked to prevent both from operating together. 8-106 (3)
5. For technical inquiries email [inspections@rmwb.ca](mailto:inspections@rmwb.ca), your questions will be forwarded to an Electrical SCO.