

## black widow porter

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- Gravity **15.9 BLG**
- ABV **6.7 %**
- IBU **30**
- SRM **34.7**
- Style **Robust Porter**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **27.6 liter(s)**

### Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **2.5 liter(s) / kg**
- Mash size **18.4 liter(s)**
- Total mash volume **25.7 liter(s)**

### Steps

- Temp **67 C**, Time **90 min**
- Temp **78 C**, Time **1 min**

### Mash step by step

- Heat up **18.4 liter(s)** of strike water to **76.4C**
- Add grains
- Keep mash **90 min** at **67C**
- Keep mash **1 min** at **78C**
- Sparge using **16.6 liter(s)** of **76C** water or to achieve **27.6 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Pale Ale Malt	5.5 kg (74.8%)	80 %	7
Grain	Munich Malt	0.7 kg (9.5%)	80 %	18
Grain	Caramel/Crystal Malt - 40L	0.45 kg (6.1%)	74 %	79
Grain	WEYERMANN CARAFA SPECIAL I	0.4 kg (5.4%)	60 %	900
Grain	Black (Patent) Malt	0.3 kg (4.1%)	55 %	985

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Willamette	20 g	60 min	7.3 %
Boil	Marynka	15 g	60 min	8.8 %
Boil	East Kent Goldings	20 g	15 min	5.1 %