Pumpernickel Porter II

- Gravity **15.2 BLG**
- ABV **6.3 %**
- IBU **29**
- SRM **22.6**
- Style **Robust Porter**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **15.4 liter(s)**
- Total mash volume **19.8 liter(s)**

Steps

- Temp **55 C**, Time **5 min**
- Temp **63 C**, Time **60 min**
- Temp **72 C**, Time **15 min**
- Temp **76 C**, Time **5 min**

Mash step by step

- Heat up **15.4 liter(s)** of strike water to **60C**
- Add grains
- Keep mash **5 min** at **55C**
- Keep mash **60 min** at **63C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **15.4 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilsner Malz Best	3 kg *(55.6%)*	81 %	3
Grain	Roggenmalz	0.5 kg *(9.3%)*	84 %	2
Grain	Caraamber	0.2 kg *(3.7%)*	75 %	70
Grain	Caramunich II Best	0.2 kg *(3.7%)*	73 %	120
Grain	Caraaroma	0.2 kg *(3.7%)*	78 %	400
Grain	Chocolate Best	0.1 kg *(1.9%)*	75 %	900
Grain	Carafa II Best	0.1 kg *(1.9%)*	65 %	1100
Grain	Rauch Malz Best	0.1 kg *(1.9%)*	77 %	6
Adjunct	Pumpernickel	1 kg *(18.5%)*	--- %	50

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	East Kent Goldings	30 g	60 min	5.7 %
Boil	East Kent Goldings	30 g	15 min	5.7 %
Aroma (end of boil)	East Kent Goldings	30 g	5 min	5.7 %

Recipe has been printed via **BREWNESS.com** - a complex online solution for homebrewers to track brewing process easily.