

## Black IPA 2

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- Gravity **17.5 BLG**
- ABV **7.5 %**
- IBU **77**
- SRM **34.7**
- Style **American IPA**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **28.8 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **20.1 liter(s)**
- Total mash volume **26.8 liter(s)**

### Steps

- Temp **56 C**, Time **10 min**
- Temp **62 C**, Time **60 min**
- Temp **72 C**, Time **25 min**
- Temp **76 C**, Time **10 min**

### Mash step by step

- Heat up **20.1 liter(s)** of strike water to **62C**
- Add grains
- Keep mash **10 min** at **56C**
- Keep mash **60 min** at **62C**
- Keep mash **25 min** at **72C**
- Keep mash **10 min** at **76C**
- Sparge using **15.4 liter(s)** of **76C** water or to achieve **28.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	5 kg (73%)	95 %	5
Grain	Strzegom Monachijski typ I	0.3 kg (4.4%)	95 %	16
Grain	Jęczmień palony	0.1 kg (1.5%)	55 %	985
Grain	carafa specjal I	0.2 kg (2.9%)	70 %	900
Grain	special x	0.1 kg (1.5%)	95 %	350
Grain	carafa specjal III	0.3 kg (4.4%)	70 %	1400
Grain	Carabelge	0.4 kg (5.8%)	95 %	30
Grain	Płatki owsiane	0.3 kg (4.4%)	95 %	3
Adjunct	Rice Hulls	0.15 kg (2.2%)	1 %	0

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	25 g	60 min	11 %
Boil	lunga	25 g	10 min	11 %
Whirlpool	Cascade	100 g	25 min	6 %

Whirlpool	Mosaic	50 g	25 min	10 %
Whirlpool	Hallertau Tradition	50 g	25 min	5 %
Whirlpool	Saaz (Czech Republic)	50 g	25 min	4.5 %
Dry Hop	Cascade	100 g	3 day(s)	6 %

### Yeasts

Name	Type	Form	Amount	Laboratory
US - 05	Ale	Slant	300 ml	---

### Extras

Type	Name	Amount	Use for	Time
Water Agent	kwas mlekowy	12 g	Mash	60 min

### Notes

- Jęczmień palony i Carafa specjal 3 zalane 24 h wcześniej zimną wodą dodane do wystadzania.  
Carafa specjal I dodane dopiero na ostatnie 5 min zacierania  
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