

Black Jack

- Gravity **15.4 BLG**
- ABV **6.5 %**
- IBU **61**
- SRM **22.5**
- Style **Black IPA**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.8 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **26.2 liter(s)**

Mash information

- Mash efficiency **77 %**
- Liquor-to-grist ratio **3.1 liter(s) / kg**
- Mash size **19.7 liter(s)**
- Total mash volume **26.1 liter(s)**

Steps

- Temp **52 C**, Time **15 min**
- Temp **67 C**, Time **50 min**
- Temp **72 C**, Time **10 min**

Mash step by step

- Heat up **19.7 liter(s)** of strike water to **57.2C**
- Add grains
- Keep mash **15 min** at **52C**
- Keep mash **50 min** at **67C**
- Keep mash **10 min** at **72C**
- Sparge using **12.9 liter(s)** of **76C** water or to achieve **26.2 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	3.9 kg (61.2%)	80 %	5
Grain	Strzegom Wiedeński	1 kg (15.7%)	79 %	10
Grain	Viking Pilsner malt	0.5 kg (7.8%)	82 %	4
Grain	Pszeniczny (śrutowany)	0.2 kg (3.1%)	85 %	4
Grain	Crystal 150	0.2 kg (3.1%)	75 %	150
Grain	Special B Malt	0.15 kg (2.4%)	65.2 %	315
Grain	Czekoladowy	0.3 kg (4.7%)	60 %	788
Grain	Płatki owsiane	0.08 kg (1.3%)	60 %	3
Grain	Jęczmień palony	0.04 kg (0.6%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	25 g	60 min	11 %
Boil	Magnum	10 g	30 min	11 %
Boil	Magnat (szyszka)	35 g	15 min	11.2 %
Boil	Lublin (Lubelski) (szyszka)	20 g	15 min	4 %

Aroma (end of boil)	Palisade	28 g	5 min	7.1 %
Dry Hop	Citra	20 g	3 day(s)	13.3 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Fermentis