

Black Jack

- Gravity **13.6 BLG**
- ABV **5.6 %**
- IBU **27**
- SRM **36.1**
- Style **Dry Stout**

Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **19.5 liter(s)**
- Total mash volume **26 liter(s)**

Steps

- Temp **66 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **1 min**

Mash step by step

- Heat up **19.5 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **16 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4 kg (61.5%)	80 %	5
Grain	Jęczmień palony	0.2 kg (3.1%)	55 %	985
Grain	Weyermann - Pszoniczny Czekoladowy	0.3 kg (4.6%)	73 %	1001
Grain	Płatki owsiane	0.5 kg (7.7%)	60 %	3
Grain	Caraaroma	0.3 kg (4.6%)	78 %	400
Grain	Monachijski typ II 20-25 EBC Weyer	0.5 kg (7.7%)	80 %	20
Grain	Carahell	0.5 kg (7.7%)	77 %	26
Grain	Carafa III	0.2 kg (3.1%)	70 %	1034

Hops

Use for	Name	Amount	Time	Alpha acid
Aroma (end of boil)	Lublin (Lubelski)	60 g	10 min	4 %
Boil	Cascade PL	15 g	35 min	8 %
Boil	Marynka	15 g	35 min	8.7 %

Yeasts

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