

BROOKLYN BREWERY'S BLACK OPS CLONE

- Gravity **21.6 BLG**
- ABV **9.7 %**
- IBU **36**
- SRM **37**
- Style **Russian Imperial Stout**

Batch size

- Expected quantity of finished beer **19 liter(s)**
- Trub loss **5 %**
- Size with trub loss **19.9 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **25.2 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **2.6 liter(s) / kg**
- Mash size **20.9 liter(s)**
- Total mash volume **28.9 liter(s)**

Steps

- Temp **50 C**, Time **10 min**
- Temp **68 C**, Time **45 min**
- Temp **77 C**, Time **10 min**

Mash step by step

- Heat up **20.9 liter(s)** of strike water to **55.8C**
- Add grains
- Keep mash **10 min** at **50C**
- Keep mash **45 min** at **68C**
- Keep mash **10 min** at **77C**
- Sparge using **12.3 liter(s)** of **76C** water or to achieve **25.2 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	BESTMALZ - pale ale	7 kg (82%)	80.5 %	6
Grain	Fawcett - Crystal żytni	0.5 kg (5.9%)	70 %	188
Grain	Castlemalting Black	0.21 kg (2.5%)	1 %	1300
Grain	Bestmalz czekoladowy	0.21 kg (2.5%)	1 %	900
Grain	Castlemalting Jęczmień palony	0.12 kg (1.4%)	1 %	1200
Sugar	Dememera Sugar	0.5 kg (5.9%)	100 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnat	30 g	60 min	12 %
Aroma (end of boil)	Marynka	50 g	5 min	8 %

Yeasts

Name	Type	Form	Amount	Laboratory
lallemand - Nottingham	Ale	Dry	11 g	lallemand

Extras

Type	Name	Amount	Use for	Time
Other	Pożywka do wina Kombi Biowin	5 g	Boil	10 min
Water Agent	chlorek wapnia 33%	16 g	Mash	60 min
Water Agent	soda	8 g	Mash	60 min