

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 | chlerek wapnia 33% | 16 g | Mash | 60 min |
| Water Agent | soda | 8 g | Mash | 60 min |