

## Full Aroma Hops , Carlberg z wiki org

- Gravity **14.5 BLG**
- ABV **6 %**
- IBU **45**
- SRM **5**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.4 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **26.9 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.5 liter(s)**
- Total mash volume **22 liter(s)**

### Steps

- Temp **62 C**, Time **20 min**
- Temp **72 C**, Time **45 min**
- Temp **75 C**, Time **10 min**

### Mash step by step

- Heat up **16.5 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **20 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **10 min** at **75C**
- Sparge using **15.9 liter(s)** of **76C** water or to achieve **26.9 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	5 kg (90.9%)	82 %	4
Grain	Karmelowy Jasny 30EBC	0.5 kg (9.1%)	75 %	30

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	15 g	90 min	12 %
Boil	Lublin (Lubelski)	40 g	45 min	3.3 %
Boil	Magnum	15 g	15 min	12 %
Boil	Amarillo	13 g	10 min	9.5 %
Dry Hop	Amarillo	15 g	4 day(s)	9.5 %
Dry Hop	Cascade	20 g	4 day(s)	6 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Slant	100 ml	Pierwsze pokolenie