

- Gravity **11.4 BLG**
- ABV ---
- IBU **40**
- SRM **29.3**
- Style **American Stout**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **12 %/h**
- Boil size **26.4 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.8 liter(s)**
- Total mash volume **18.4 liter(s)**

### Steps

- Temp **67 C**, Time **120 min**
- Temp **75 C**, Time **60 min**

### Mash step by step

- Heat up **13.8 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **120 min** at **67C**
- Keep mash **60 min** at **75C**
- Sparge using **17.2 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

### Fermentables

| Type  | Name                        | Amount          | Yield | EBC  |
|-------|-----------------------------|-----------------|-------|------|
| Grain | Weyermann - Pale Ale Malt   | 3.2 kg (69.7%)  | 85 %  | 6    |
| Grain | Black Barley (Roast Barley) | 0.27 kg (5.9%)  | 55 %  | 1367 |
| Grain | Weyermann - Pale Wheat Malt | 0.75 kg (16.3%) | 85 %  | 4    |
| Grain | bestmalz - rye              | 0.17 kg (3.7%)  | 80 %  | 6    |
| Grain | weyermann - chocolate malt  | 0.2 kg (4.4%)   | 50 %  | 900  |

### Hops

| Use for             | Name     | Amount | Time   | Alpha acid |
|---------------------|----------|--------|--------|------------|
| Boil                | Chinook  | 5 g    | 50 min | 12.8 %     |
| Aroma (end of boil) | Cascade  | 60 g   | 8 min  | 6.8 %      |
| Aroma (end of boil) | Chinook  | 25 g   | 8 min  | 12.8 %     |
| Aroma (end of boil) | Amarillo | 30 g   | 8 min  | 8.8 %      |

### Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
|------|------|------|--------|------------|

|                      |     |       |         |                  |
|----------------------|-----|-------|---------|------------------|
| FM52 Amerykański Sen | Ale | Slant | 1200 ml | Fermentum Mobile |
|----------------------|-----|-------|---------|------------------|

### Extras

| Type   | Name      | Amount | Use for | Time  |
|--------|-----------|--------|---------|-------|
| Fining | Whirlfloc | 3 g    | Boil    | 5 min |

### Notes

- zacieranie od 65-60 - 120minut  
podgrzanie od 60-75 - 30minut  
wygrzew na 75min 30minut

122.3 g cukru wyszło 19L 2BLG gestoc koncowa  
*Mar 28, 2017, 12:00 AM*