

Status of the  
Proto192

Jörn Becker

Endcap  
acceptance

Space

Proto192

Design

Status

Timeline



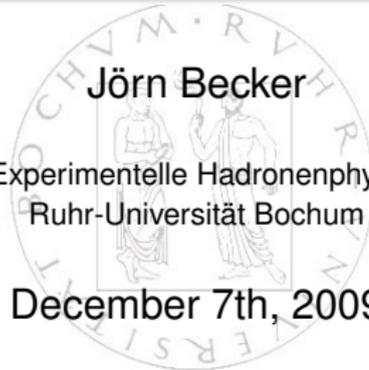
# Status of the Proto192

## and rearrangement of the Endcap crystals

Jörn Becker

Experimentelle Hadronenphysik  
Ruhr-Universität Bochum

December 7th, 2009



# Acceptance gap

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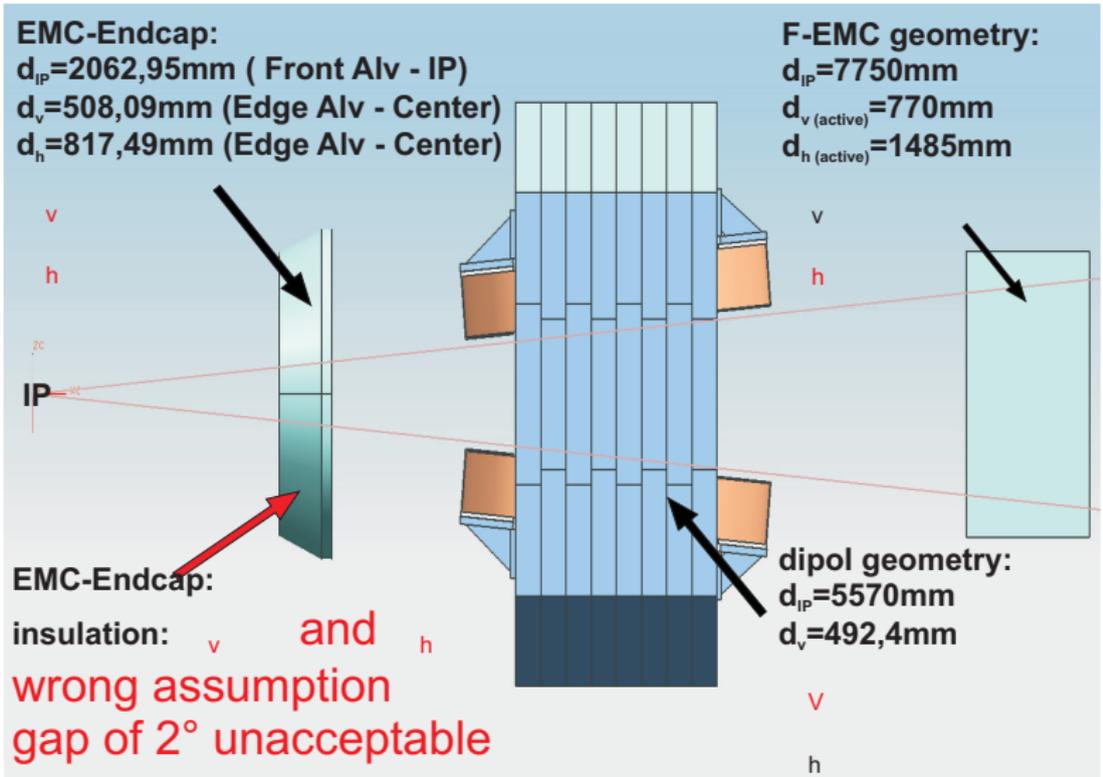
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# Proposed rearrangement

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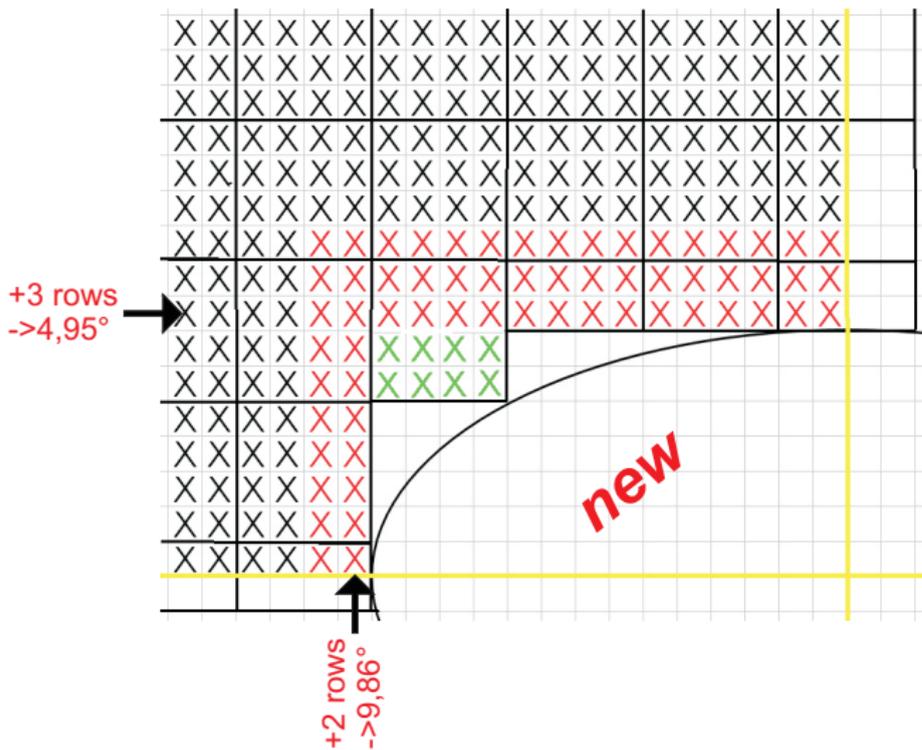
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# New design (Preliminary)

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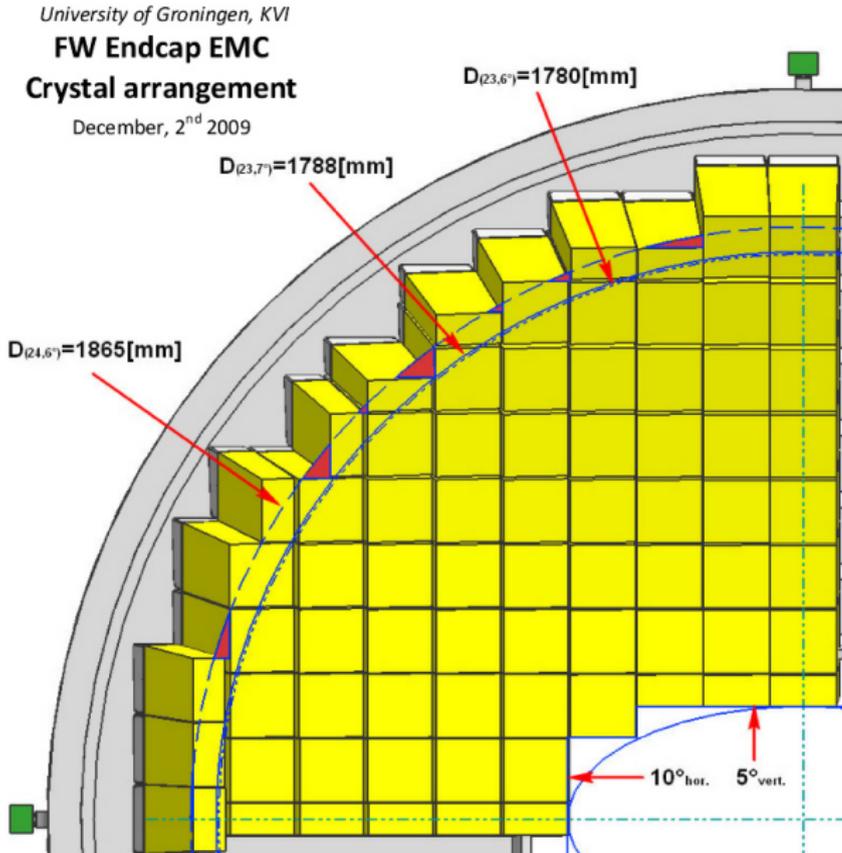
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# VPT dimensions and space requirements

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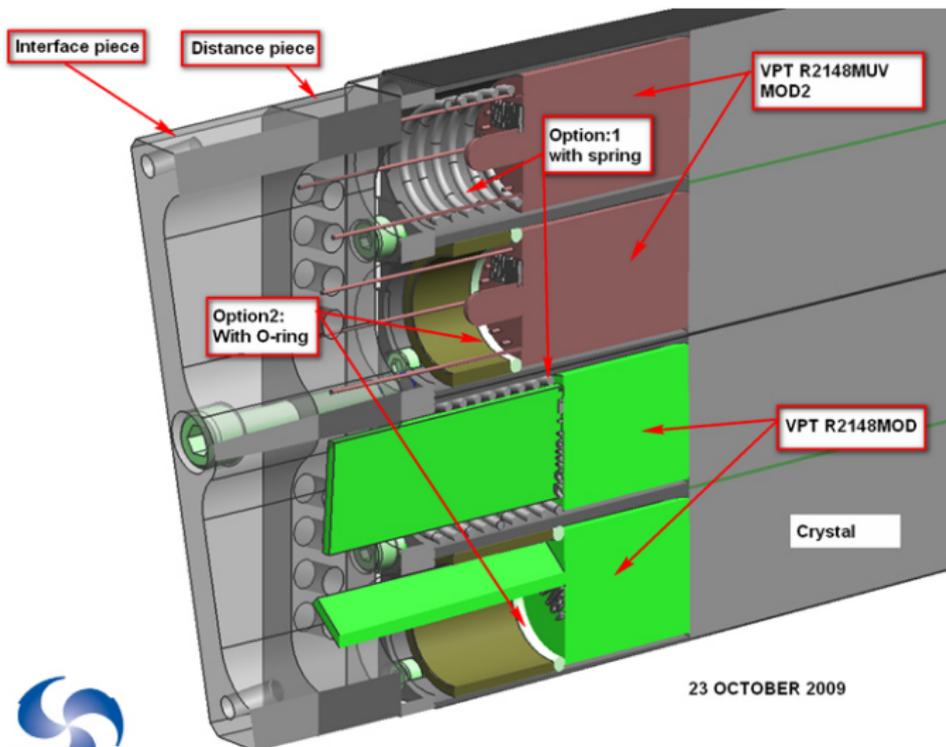
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23 OCTOBER 2009



*Kernfysisch Versneller Instituut*

# VPT dimensions and space requirements

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Name	Producer	Diameter	Diameter +	Length bulb + seal	Length_max / mm	Notes
R2148MUV MOD2	Hamamatsu	23.9+0-0.5 mm	0	40±1.5 mm + 13 mm	54,5	glass prototype 20.8.09
VPTT	RIE	22.5+0-0.7 mm	0	≤ 46 mm	46	Tetrode 5.2.09

	Length / mm
Piece:	
Mountpiece at lowest point	60
Mountplate	8
Preamp with space for cables	36

	Interface-Piece / mm				
	X3 Y3	X3 Y4	X5 Y4	X3 Y9	X6 Y7
Space on lowest edge	28,56	26,35	22,55	20,05	16,69
total space	96,56	94,35	90,55	88,05	84,69
<b>Space / mm:</b>					
R2148MUV MOD2	6,06	3,85	0,05	-2,45	-5,81
VPTT	14,56	12,35	8,55	6,05	2,69

# Space requirements behind the backplate

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- Only 15 mm space between backplate and back insulation (30 mm)
- Cooling circuit and all cables has to fit in this 15 mm
- With a vacuumshield (20 mm) in the back one would gain at least 10 mm

# Proto192 design

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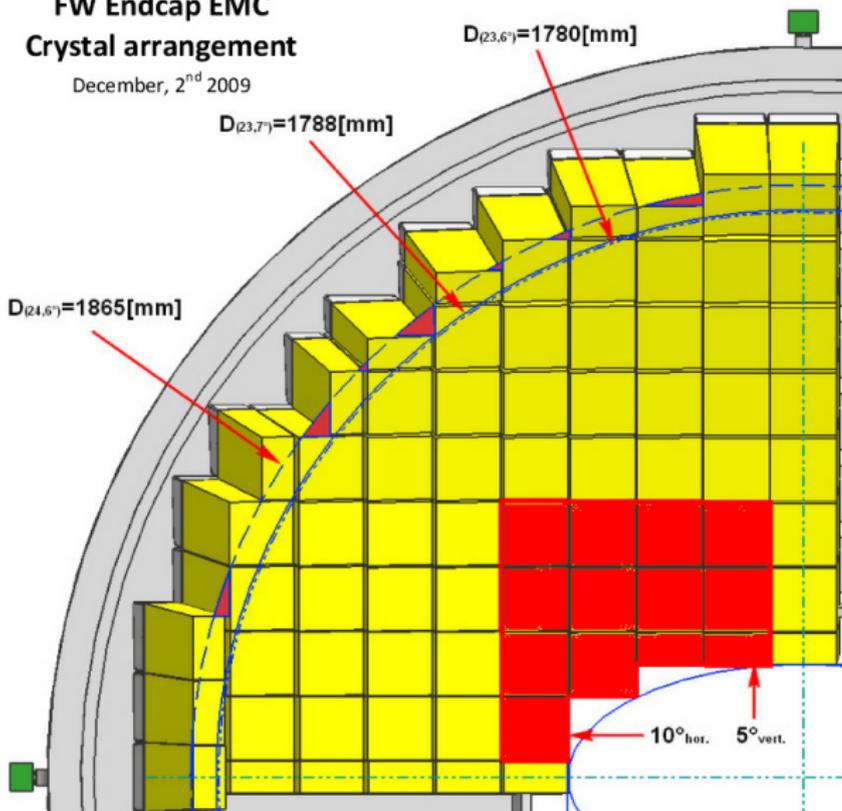
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*University of Groningen, KVI*

## FW Endcap EMC Crystal arrangement

December, 2<sup>nd</sup> 2009



## Available / In progress

- Crystals (Gießen)
- Foils (Bochum)
- Alveoles (Bochum / KVI)
- Inserts and Mountplates (Bochum)
- Chiller, pressure and temperature sensors for the cooling circuit (Bochum)
- Possibility to produce the cooling circuit (Bochum)

## To be done

- Backplate design (KVI)
- Design for the cooling circuit (Bochum)
- Interface design and production (KVI)
- Casing (Bochum)
- Translation stage (Bonn)
- Nitrogen cooling (Bochum / KVI)
- Feedthrough PCB for cables (Bochum / KVI / Basel)
- Design for APD read out (KVI)
- coupling between crystal and VPT/VPTT/APD  
(see also email Philippe Oct. 9th, 2009)

## Available / In progress

- Light pulser system (Bochum)
- THMP (Bochum)
- Preamp prototype for old Hamamatsu VPT with HV on board (Basel)
- ADCs (Uppsala)
- glas bulb Hamamatsu VPTs (10 prototypes ordered by Uppsala)
- RIE VPTTs (next week 50 in total at Bochum)
- APDs ordered (Basel / Uppsala)
- HV supplies (Basel)

## To be done

- Further preamp developments (Basel)
- PT100 development (Warsaw / Bochum)
- thin cables for PT100 connection (Bochum)
- Detector control system with EPICS (Bochum)
- Readout software (Uppsala ...)

# Timeline

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- First beam tests at ELSA
- Read out just with RIE VPTTs starts in spring
- Hamamatsu VPTs integration in summer
- APD implementation in fall or later

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**Timeline**

Thank you for your attention