



**MQXFA10
Coil Acceptance Review**

US-HiLumi-doc-4186
Other:
Date: 9/08/2021
Page 1 of 4



US HL-LHC Accelerator Upgrade Project

MQXFA10 Coil Acceptance Review



MQXFA10 Coil Acceptance Review

US-HiLumi-doc-4186
Other:
Date: 9/08/2021
Page 2 of 4

TABLE OF CONTENTS

1. GOAL & SCOPE.....	3
2. CHARGES	3
3. TECHNICAL INFORMATION	4
4. REFERENCES	4



MQXFA10 Coil Acceptance Review

US-HiLumi-doc-4186

Other:

Date: 9/08/2021

Page 3 of 4

1. Goal & scope

The HL-LHC AUP project is planning to start assembly of MQXFA10 magnet in September 2021. MQXFA10 is the third series low-beta quadrupole magnet (MQXFA) for the Inner Triplet of the High Luminosity LHC. If MQXFA10 meets MQXFA requirements [1] it will be used in a Q1/Q3 cryo-assembly to be installed in the HL-LHC.

For MQXFA10 assembly (including a spare coil) AUP is planning to use QXFA coils: 129, 131, 132, 220 and 221. Coil 129 was approved for use in MQXFA09 [2] and is assumed approved for use in MQXFA10.

Conductor and series coil specifications are presented in [3-7]. Discrepancy or Non-conformity Reports are generated whenever a component does not meet specifications.

The reviewers are requested to review discrepancies and non-conformities in strands, cables and coils, for the following coils: 131 (cable P43OL1141), 132 (cable P43OL1146), 220 (cable P43OL1135), and 221 (cable P43OL1143).

2. Charge questions

The committee is requested to answer the following questions:

1. Have Discrepancies and Non-conformities been adequately documented and processed?
2. If there are critical Discrepancies/Non-conformities, have they been adequately documented and processed?
3. Did the L3s properly identified critical Discrepancies/Non-conformities?
4. Is there any coil that you recommend not to use in MQXFA10?
5. Do you have any other comment or recommendation regarding these coils and their conductor for allowing MQXFA10 to meet MQXFA requirements [1]?



MQXFA10

Coil Acceptance Review

US-HiLumi-doc-4186

Other:

Date: 9/08/2021

Page 4 of 4

3. Technical information

Committee

Steve Gourlay (chairperson), LBNL
Arup Ghosh, BNL retired
Susana Izquierdo Bermudez, CERN

Date and Time

September 8, 2021. Start time is 7/9/10/16 (LBNL/FNAL/BNL-FSU/CERN)

Location/Connection

Video-link by Zoom, info by email.

Link to agenda with talks and other documents

<https://indico.fnal.gov/event/50739/>

4. References

- 1) *MQXFA Functional Requirements Specification*, US-HiLumi-doc-36
- 2) *MQXFA09 Coils Acceptance Review Report*, US-HiLumi-doc-4091
- 3) *Specification for Quadrupole Magnet Conductor*, US-HiLumi-doc-40
- 4) *Cable Specification*, US-HiLumi-doc-74
- 5) *Quadrupole Magnet Cable Insulation*, US-HiLumi-doc-75
- 6) *QXFA Series Coil Production Specification*, US-HiLumi-doc-2986
- 7) *QXFA Series Coil Fabrication Electrical QC plan*, US-HiLumi-doc-521