

**From:** Ardavan Ghassemi <AGhassemi@hamamatsu.com>  
**Subject:** RE: JLab Hall C NPS Project  
**Date:** October 10, 2013 5:23:12 PM EDT  
**To:** "Hyde, Charles E." <chyde@odu.edu>  
▶ 7 Attachments, 498 KB

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Hi Charles,

It was a great pleasure talking to you last Friday. Below, please find my partial follow up on the action items from our phone conversation:

1. Attached, please find datasheet of R11187 (replacement of R7877). Unfortunately, we don't have time jitter data for R11187, but this PMT has a similar structure to (but with less dynodes than) another PMT, R7600, with a SPE TTS (Transit Time Spread) of 350ps FWHM. Thus, we expect R1187 to provide a faster time resolution than that.
2. Attached, please find data on (I) effects of magnetic field and (II) lifetime [change in gain vs. time] for R4125 and R7877. Since R11187 is essentially R7877 without flange, we expect these sets of data for R7877 to apply to R11187 as well.
3. To go by an active-area close to the 30x30mm PbF2 crystals, R7525 and R7111 are suitable 28mm candidates, based on your other technical requirements. Please find the datasheets of both attached. Unfortunately, we don't have lifetime or magnetic field effect data for either one.
4. R7525 and R7111 are rather pricey. If you can use 1" PMTs with PbF2 crystals instead, R8619 and R9800 will be more cost effective (while meeting your other technical requirements) due to the fact that these are popular mass-produced PMTs. Please find the datasheets of both by following the links below:

R8619: [http://www.hamamatsu.com/resources/pdf/etd/R8619\\_TPMH1331E03.pdf](http://www.hamamatsu.com/resources/pdf/etd/R8619_TPMH1331E03.pdf)

R9800: [http://www.hamamatsu.com/resources/pdf/etd/R9800\\_TPMH1298E05.pdf](http://www.hamamatsu.com/resources/pdf/etd/R9800_TPMH1298E05.pdf)

I hope you find the above info helpful. I look forward to hearing from you on which PMT you'd like to consider for using with PbF2 crystals (R11187, R7525, R7111, R9800, or R8619); I'll then follow up on providing you with its pricing along with that of R4125. In the meantime, please let me know if you have any question about the above info or if I can help you with anything else.

Best Regards,

Ardavan Ghassemi

Technical Sales Rep for Scientific Projects

Hamamatsu Corp.

(P) 908.252.7632  
<http://www.hamamatsu.com>

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From: Hyde, Charles E. [chyde@odu.edu]  
Sent: Friday, October 04, 2013 11:42 AM  
To: Ardavan Ghassemi  
Subject: JLab Hall C NPS Project

Dear Ardavan,

Thank you for your assistance in developing a budgetary quote and providing additional technical information for the Jefferson Lab Hall C Neutral Particle Spectrometer (NPS) project.

I attach a summary of our conversation with a review of our requested quotes.

Sincerely,  
Dr. Charles E. Hyde  
Professor, and Chief Departmental Advisor  
Department of Physics  
Old Dominion University  
Norfolk VA 23529  
1 (757) 683 5853  
www.odu.edu/~chyde

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From: Ardavan Ghassemi [AGhassemi@hamamatsu.com]  
Sent: Thursday, October 03, 2013 1:41 PM  
To: Hyde, Charles E.  
Subject: RE: JLABs Calorimetry Project

Dear Charles,

No problem at all. I'm glad to hear from you.

I'll reach you at (757) 683 5853 tomorrow (10/4) at 11am. Talk to you then.

Best Regards,

Ardavan Ghassemi  
Technical Sales Rep for Scientific Projects  
Hamamatsu Corp.  
(P) 908.252.7632  
<http://www.hamamatsu.com>

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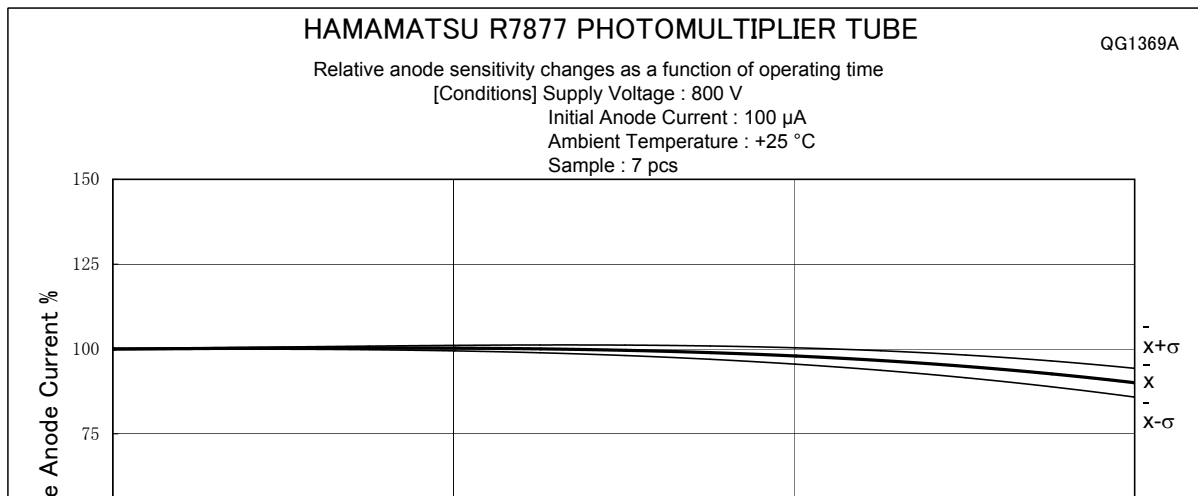
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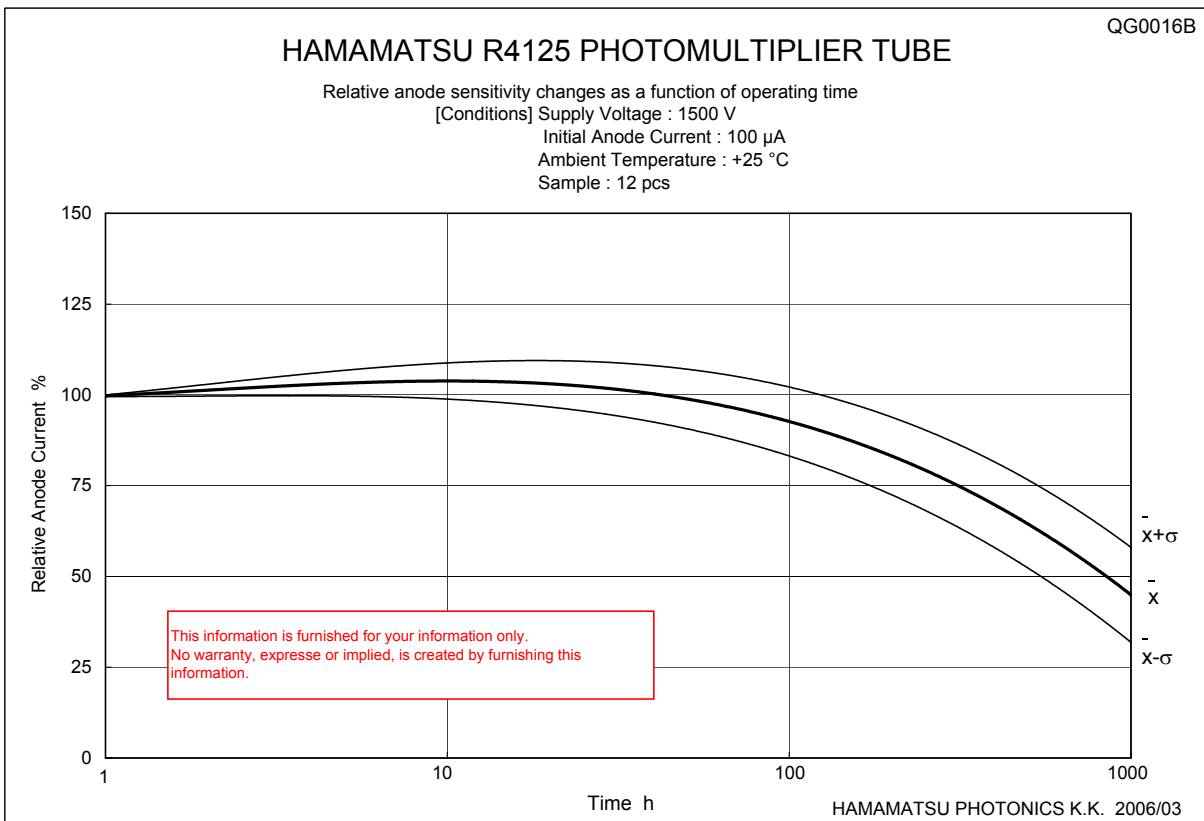
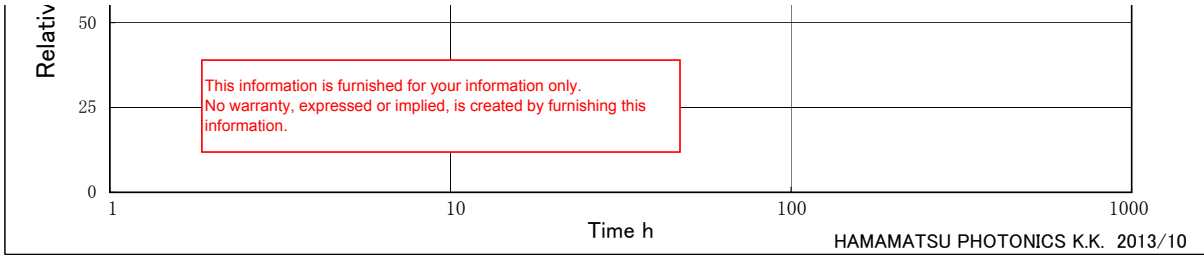
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[R7111.pdf \(105 KB\)](#) [R7525-TPM....pdf \(38.2 KB\)](#)

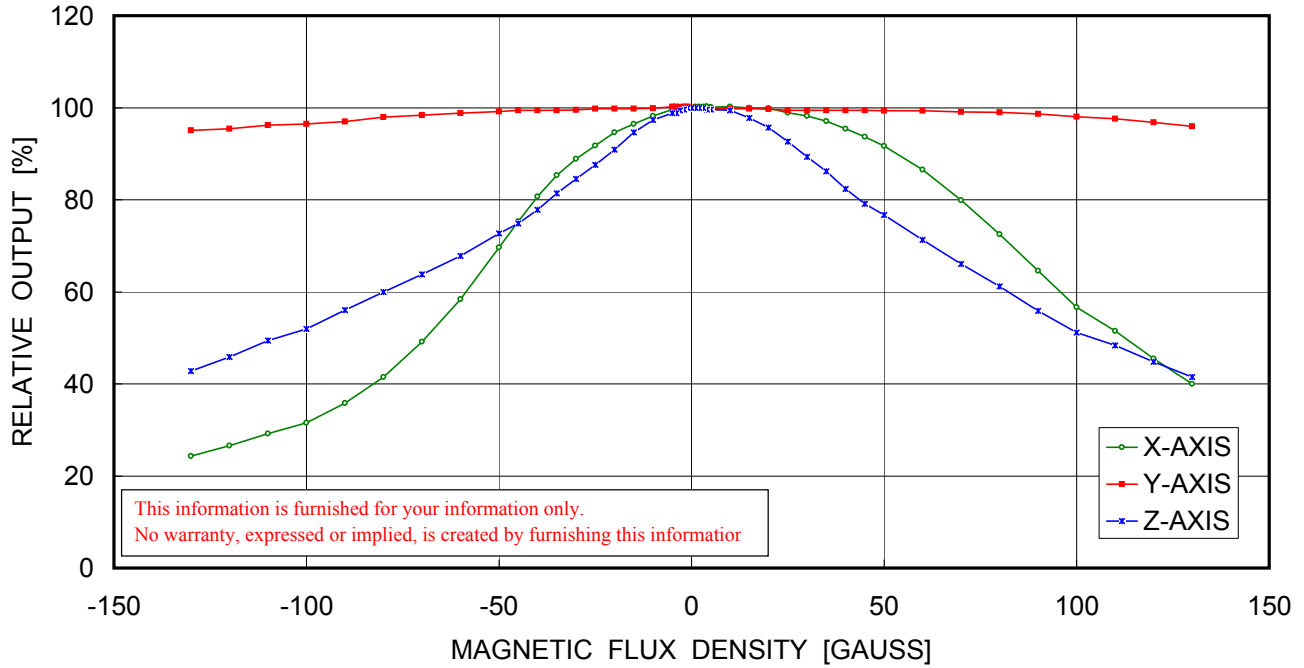




[R4125 Effect....pdf \(137 KB\)](#)

# R7877 Effect of Magnetic Fields on Anode Output

Supply Voltage : 705



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[R11187 dat....pdf \(89.5 KB\)](#)