

Science Equivalent	Filter	COMMENTS and Specification Definitions
<b>Broad H and Red Grism Ref</b>	<b>F160W</b>	-Broad Band Box Filter with Side Slopes $\leq 1.5\%$ ; Central Wavelength tolerance $\pm 5\text{\AA}$ (TBD) -Peak Transmission - highest possible - used NIC +5%. -Highest Priority Science. -Red/Blue Grisms must overlap.
<b>Broad J</b>	F125W	-Square Filter with Side Slopes $\leq 1.5\%$ ; Central Wavelength tolerance $\pm 5\text{\AA}$ (TBD). -Peak Transmission - highest possible - used NIC +5%. -Filter characteristics similar to ground-based (ease of transform).
<b>"Red" Low Resolution Grism</b>	<b>G141</b>	-Details TBS by R. Boucarut. -Desire range 1.1-1.7 microns for overlap with the Blue Medium Resolution Grating. -Investigate cost differential between NIC-type (range 1.2-1.7) and desired grating.
<b>Paschen Alpha</b>	<b>F187N</b>	-Narrow Band side slopes as vertical as possible; flat pk transmission between w-90 and w+90 -Central wavelength of line filter shifted to red by 500 km/sec. Tolerance $\pm 1\text{\AA}$ (TBD).
<b>Paschen Alpha continuum</b>	F184N	-Central wavelength of continuum filter as spec.; P_alpha continuum placed blueward to avoid contamination by other lines (recommended by M. Rieke). -Filter widths are 1% of central wavelength. -W-01 (W+01) points gt (lt) Central Wavelength - (FWHM).
<b>Water/CH_4 contin</b>	F127M	-Medium Band Box filter with Side Slopes $\leq 1\%$ ; Central Wavelength tolerance $\pm 2\text{\AA}$ (TBD)
<b>Water/CH_4 line</b>	F139M	-Water+Methane Line and continuum are temperature diagnostics for cool objects. -Selected F139M instead of pair at F172 because of potential detector sensitivity limit 1.8 mic -Continuum found between 1.22 and 1.32, bandwidth selected as 700A (Marley/Young) -Molecular band within 1.35 and 1.42 microns, bandwidth selected as 700A.
<b>"Blue" High Resolution Grating</b>	G102	-Details TBS by R. Boucarut. -Desire range 0.9 to 1.15 microns for overlap with the Red Low Resolution Grating. -To maximize continuum and line sensitivities, grism range should not exceed 1.15 by too much -Red/Blue Grisms must overlap. -Blue grism 2x resolution of Red grism.
<b>"Blue" Filter, Blue Grism Ref</b>	F098M	-Medium Band Box filter with Side Slopes $\leq 1\%$ ; Central Wavelength tolerance $\pm 5\text{\AA}$ (TBD). -Filter to serve as Blue Grism Reference and Medium Band filter for redshift studies. -Filter designed for continuous coverage from 0.9 microns to the J filter.
<b>[Fe II]</b>	<b>F164N</b>	-Narrow Band side slopes as vertical as possible; flat pk transmission between w-90 and w+90
<b>[Fe II] continuum</b>	<b>F167N</b>	-Central wavelength of line filter shifted to red by 500 km/sec. Tolerance $\pm 1\text{\AA}$ (TBD). - Line filter design to minimize contamination from line 1.6401 microns (HI Brackett 12). -Filter widths are 1% of central wavelength. -W-01 (W+01) points gt (lt) Central Wavelength - (FWHM). -Continuum filter is shifted by $1.013 \times$ Central_wavelength of Line filter - provides overlap $< 20\%$ of peak transmission.
<b>H_20 and NH_3</b>	F153M	-Medium Band Box filter with Side Slopes $\leq 1\%$ ; Central Wavelength tolerance $\pm 5\text{\AA}$ (TBD). -Water Band and Ammonia
<b>Paschen Beta</b>	F128N	-Narrow Band side slopes as vertical as possible; flat pk transmission between w-90 and w+90
<b>Paschen Beta continuum</b>	F130N	-Central wavelength of line filter shifted to red by 500 km/sec. Tolerance $\pm 1\text{\AA}$ . - Minimize contamination from 12869A + 12928A H_2 and 12784A HeI. -Filter widths are 1% of central wavelength. -Continuum filter is shifted by $1.013 \times$ Central_wavelength of Line filter - provides

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		<p>overlap ~ 20% of peak transmission.</p> <p>-W-01 (W+01) points gt (lt) Central Wavelength - (FWHM).</p>
<b>[FeII]</b>	F126N	<p>-Narrow Band side slopes as vertical as possible; flat pk transmission between w-90 and w+90</p> <p>-To be used with [FeII] 1.64 for reddening studies;</p> <p>-Central wavelength of line filter shifted to red by 500 km/sec. Tolerance +/- 1A(TBD).</p> <p>-Minimize contamination 12529A HeI and 12618A H_2 triplet.</p> <p>-Filter widths are 1% of central wavelength.</p> <p>-W-01 (W+01) points gt (lt) Central Wavelength - (FWHM).</p> <p>-Note, no unique continuum filter necessary.</p>
<b>Paschen Beta (redshifted)</b>	F132N	<p>-Narrow Band side slopes as vertical as possible; flat pk transmission between w-90 and w+90</p> <p>-Filter provides z out pas Coma cluster (~0.03).</p> <p>-Filter widths are 1% of central wavelength.</p> <p>-W-01 (W+01) points gt (lt) Central Wavelength - (FWHM).</p> <p>-Note, no unique continuum filter necessary.</p> <p>-Attenuation:</p> <ol style="list-style-type: none"> <li>Attenuation boundaries were calculated using the UVIS formulae for the blue side (Trauger) <ul style="list-style-type: none"> <li>Narrowband Lam_blue_att &lt; [2*W-01 - W+01]</li> <li>Broadband Lam_blue_att &lt; [W-01 - W+50 + W+50]</li> <li>Narrowband Lam_red_att --&gt; symmetric with Blue attenuation boundary (TBD Trauger)</li> <li>Broadband Lam_blue_att --&gt; symmetric with Red attenuation boundary (TBD Trauger).</li> </ul> </li> <li>Attenuation scaled from UVIS specifications (TBD Boucarut)</li> </ol>