

IPOptica is always focusing on the future, to further develop technology and better satisfy broad applications, and always a better solution for most special demands of free space Rotators and Isolators by adjustable, broadband, and super large aperture available for most wavelength, at the same time with high performance and reliable. IPOptica's Faraday Devices have been designed to cover full wavelengths from 400 to 1100nm, while other wavelengths are available upon request.

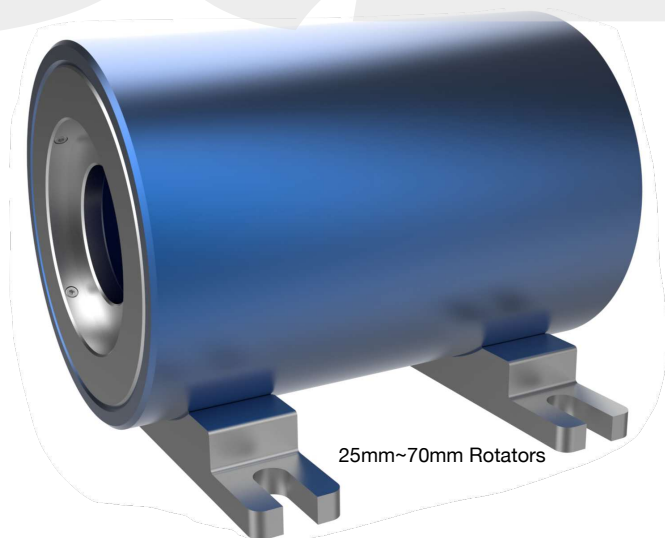
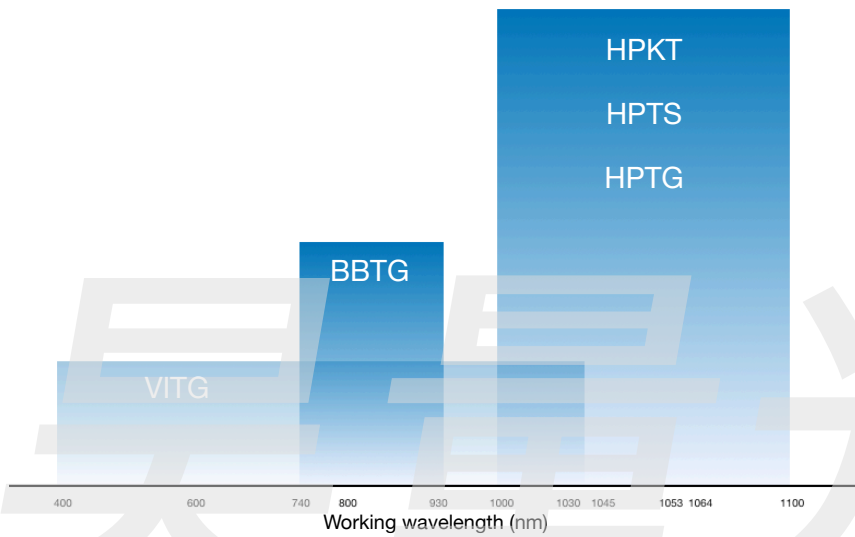
IPOptica respect talents and their years experience from aesthetic combined engineering design, theoretical data simulations, precision machining, and quality control, and have been specifically designed to satisfy the demands of high power damage threshold, low absorption, low insertion loss and high isolation.

### FEATURES

- High damage threshold and low insertion loss for high power application
- Low thermal lensing effect and thermal depolarization phenomena
- Orthogonal or Brewster isolated beams available upon request
- Tunable input polarization state
- Large aperture up to 70mm for 1000nm range
- Reliable quality and integrated design satisfy hostile operating environments

### APPLICATIONS

- Protection of Pulsed and CW lasers against optical feedback
- Protection of seed sources by elimination of frequency instability
- Isolate ASE generated by amplifiers





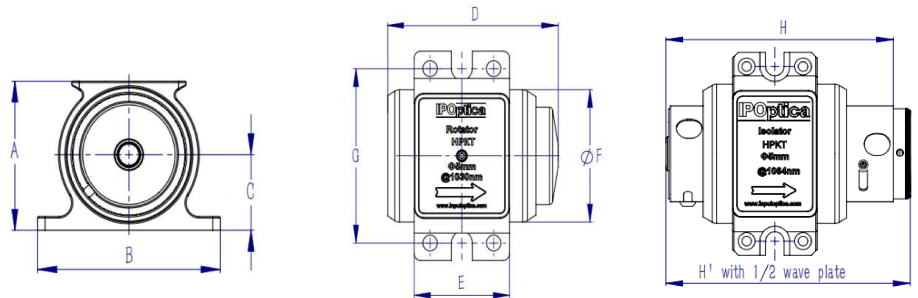
HPKT series is making superior Faraday Rotators & Isolators providing higher extinction at high incident power, an order of lower absorption and Thermo-optic Coefficient, making it a better solution for ultra-fast and high power applications with respect to HPTG series. HPKT series focusing on 1000-1100nm market demands with specified performance up to 400W and without damage over 1.1kW of average power testing.

The high quality of HPKT series rely on our talents' years experience from aesthetic combined engineering design, theoretical data simulations, precision machining, and quality control, and have been specifically designed to satisfy the demands of high power damage threshold, lower nonlinear refractive index, lower focal shift, lower thermo effect, lower absorption, lower insertion loss and higher isolation.

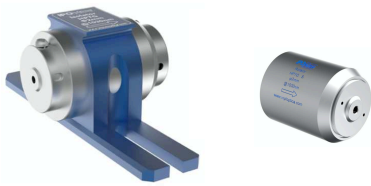
### SPECIFICATIONS

MODEL	HPKT High Power 1030nm, 1045nm, 1053nm, 1064nm (1000-1100nm)
Clear Aperture D	3.5mm, 5mm, 8mm, 10mm, 12mm
Working Wavelength	1000 ~ 1090nm
Rotation (Peak)	45° ± 0.5°
Damage Threshold (@1064nm)	>7J/cm <sup>2</sup> @ 10ns >600mJ/cm <sup>2</sup> @ 8ps
Transmission Rate, %	>98% (Rotator) >96% (Isolator)
Storage Temp Range	-40°C ~70°C
Tunable Temp Range	20°C ± 10°C / On request
Peak Isolation	>35dB (Isolator)
Isolated Beam Pointing	<5 mrad

### DIMENSIONS



	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)	H(mm)	H'(mm)
3.5mm	43	60	22.2	53.6	30	38	50	67.6	73.9
5mm	43	60	22.2	53.6	30	38	50	67.6	73.9
8mm	54.4	72	28.6	57.2	30	49.4	60	81.3	85.9
10mm	71.3	90	36.2	72	40	64.2	70	105.8	105.6
12mm	71.2	90	36.2	72	40	64.2	70	105.8	105.6



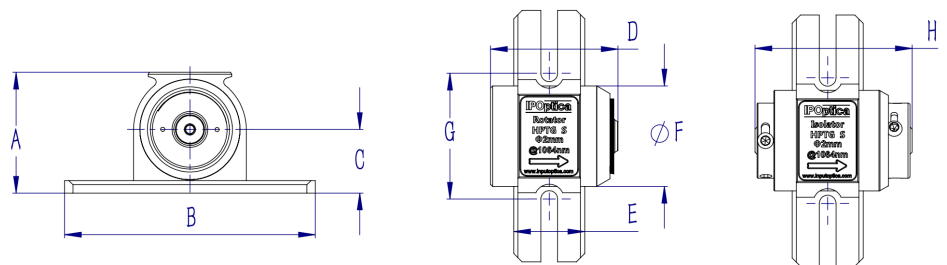
HPTS series of Faraday devices have been designed to meet high power and high energy laser (1000-1100nm) demands. Benefit from over 20% Verdet Constant higher and 30% less adsorption with respect with HPTG series, HPTS series is awarded low thermally induced birefringence and much cabinet dimensions contributing to laser design, especially for 1030nm seed source laser.

The high quality of HPTS series rely on our talents' years experience from aesthetic combined engineering design, theoretical data simulations, precision machining, and quality control, and have been specifically designed to satisfy the demands of high power damage threshold, low absorption, low insertion loss and high isolation.

### SPECIFICATIONS

MODEL	HPTS High Power 1030nm, 1045nm, 1053nm, 1064nm (1000-1100nm)
Clear Aperture D	2mm, 3.5mm
Working Wavelength	1000 ~ 1090nm
Rotation (Peak)	45° ± 0.5°
Damage Threshold (@1064nm)	10J/cm <sup>2</sup> @ 10ns (MAX 15J/cm <sup>2</sup> on request) 1J/cm <sup>2</sup> @ 8ps (MAX 1.5J/cm <sup>2</sup> on request)
Transmission Rate, %	>98% (Rotator) >96% (Isolator)
Storage Temp Range	-40°C ~70°C
Tunable Temp Range	20°C ± 10°C / On request
Peak Isolation	>35dB (Isolator)
Isolated Beam Pointing	<5 mrad

### DIMENSIONS



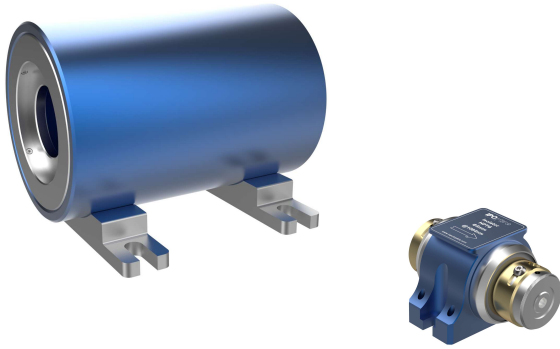
	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)	H(mm)
<b>2mm</b>	28.9	60	15.2	30.6	17	24	30	37.6
<b>3.5mm</b>	35.6	60	22.2	45.6	17	38	50	61.5

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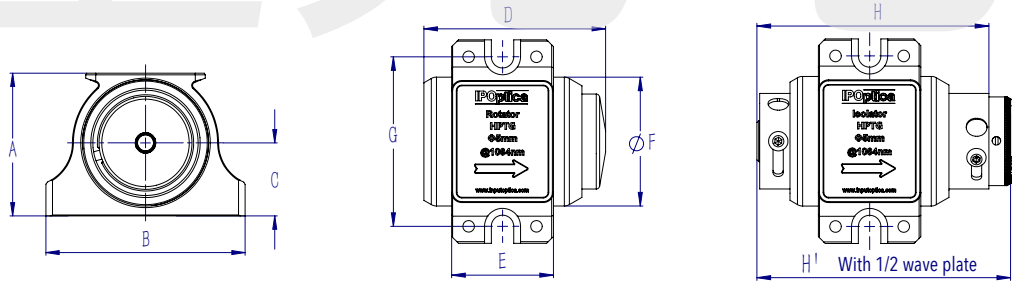
HPTG series Faraday Rotator & Isolator have been designed to provide the superior protection for solid state lasers and fiber lasers in 1000 - 1100nm range, The HPTG series support broad aperture range devices and tested up to 400W for CW power.

The high quality of HPTG series rely on our talents' years experience from aesthetic combined engineering design, theoretical data simulations, precision machining, and quality control, and have been specifically designed to satisfy the demands of high power damage threshold, low absorption, low insertion loss and high isolation.

## SPECIFICATIONS

MODEL	HPTG	
	High Power 1030nm, 1045nm, 1053nm, 1064nm (1000-1100nm)	
Clear Aperture D	3.5mm/5mm, 8mm	10mm/12mm, 15mm, 20mm, 25mm, 30mm, 35mm, 45mm, 60mm, 70mm
Working Wavelength	1000 ~ 1090nm	
Rotation (Peak)	45° ± 0.5°	45° ± 1°
Damage Threshold	10J/cm <sup>2</sup> @ 10ns (MAX 15J/cm <sup>2</sup> on request) 1J/cm <sup>2</sup> @ 8ps (MAX 1.5J/cm <sup>2</sup> on request)	
Transmission Rate, %	>98% (Rotator) >96% (Isolator)	>98% (Rotator) >96% (Isolator)
Storage Temp Range	-40°C ~70°C	-10°C ~60°C
Tunable Temp Range	20°C ± 10°C / On request	
Peak Isolation @22°C	>35dB (Isolator)	
Isolated Beam Pointing	<5 mrad	On request

## DIMENSIONS



	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)	H(mm)	H'(mm)
3.5/5mm	43	60	22.2	53.6	30	38	50	67.6	73.9
8mm	54.4	72	28.6	57.2	30	49.4	60	81.3	85.9
10/12mm	71.3	90	36.2	72	40	64.2	70	105.8	105.6
15mm	79.4	100	39.2	88.2	50	72.2	76	125.8	131.3
20mm	79.4	100	39.2	117.7	50	72.2	76	174.5	165.6
25mm	n/a	150	72	181	130	n/a	130	245.8	261
30mm	n/a	150	72	181	130	n/a	130	255.4	270
35mm	n/a	150	72	181	130	n/a	130	263.8	278.8
45mm	n/a	180	79	208	165	n/a	140	308.5	321
50~70mm	Up on request								

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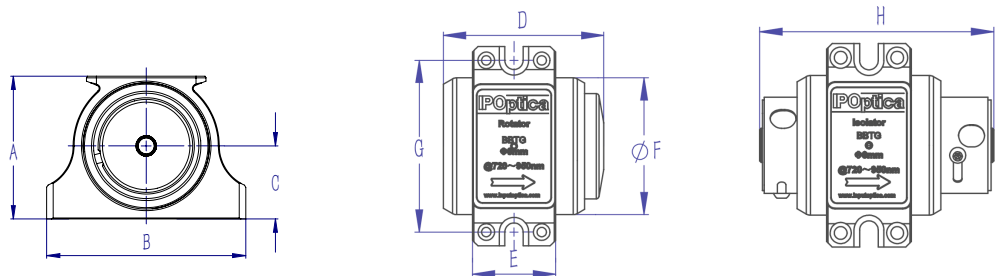
IPOptica's MPBB line of Faraday devices have been designed to minimum pulse broadening by unique short optical path length and low reflective indices. This results the great broadband wavelength protection to the ultra-short laser pulses at from 720nm to 950nm.

The high quality of MPBB line relay on our talents' years experience from aesthetic combined engineering design, theoretical data simulations, precision machining, and quality control, and have been specifically designed to satisfy the demands of high power damage threshold, low absorption, low insertion loss and high isolation.

### SPECIFICATIONS

MODEL	BBTG Broadband 810nm (720 ~ 950nm)	
Clear Aperture D	5mm	8mm, 10/12mm (up to 50mm)
Working Wavelength	720 ~ 950nm	
Rotation (Peak)	90° ± 1°	
Damage Threshold	3.4J/cm <sup>2</sup> @ 10ns 1J/cm <sup>2</sup> @ 10ns	5J/cm <sup>2</sup> @ 10ns 2kW/cm <sup>2</sup> CW
Transmission Rate, %	>98% (Rotator) >93% (Isolator)	
Storage Temp Range	-40°C ~70°C	
Peak Isolation @22°C	>35dB (Isolator)	

### DIMENSIONS



	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)	H(mm)
5mm	43	60	22.2	53.6	30	38	50	67.6
8mm	43	60	22.2	53.6	30	38	50	75
10/12mm	54.4	72	28.6	57.2	30	49.4	60	92

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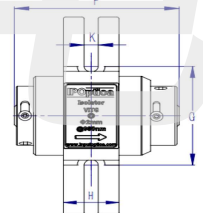
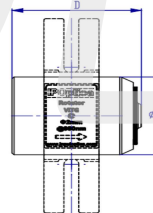
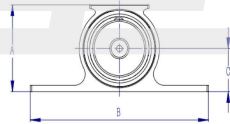
VITG series products have been designed to cover broad demands of wavelength from 400nm to 980nm, and always better performance, reliable, exquisite, and elegant.

The high quality of VITG series Faraday devices rely on our talents' years experience from aesthetic combined engineering design, theoretical data simulations, precision machining, and quality control. Therefore, the broadband, high transmission, and high power VITG products are always better satisfy various applications.

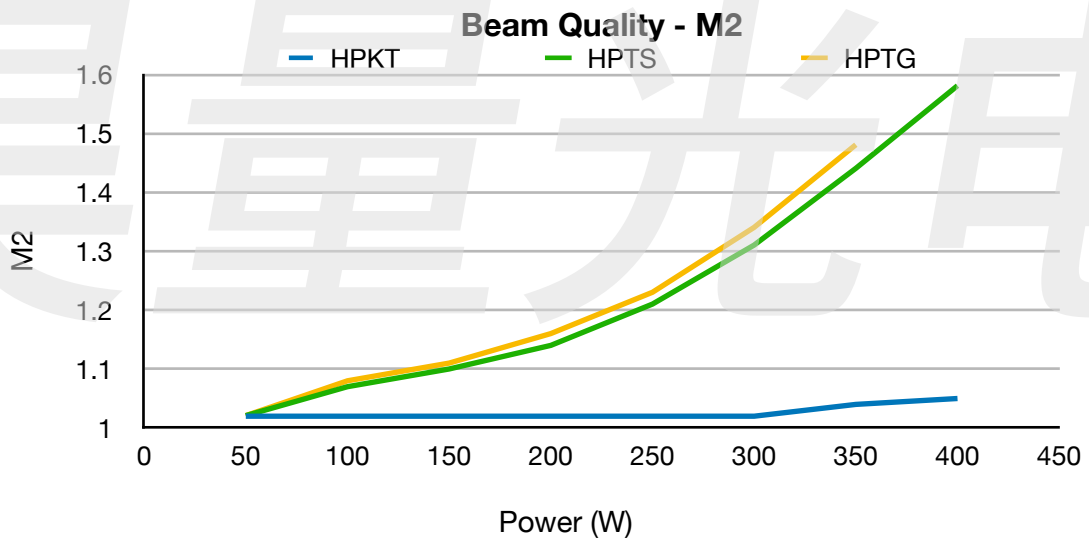
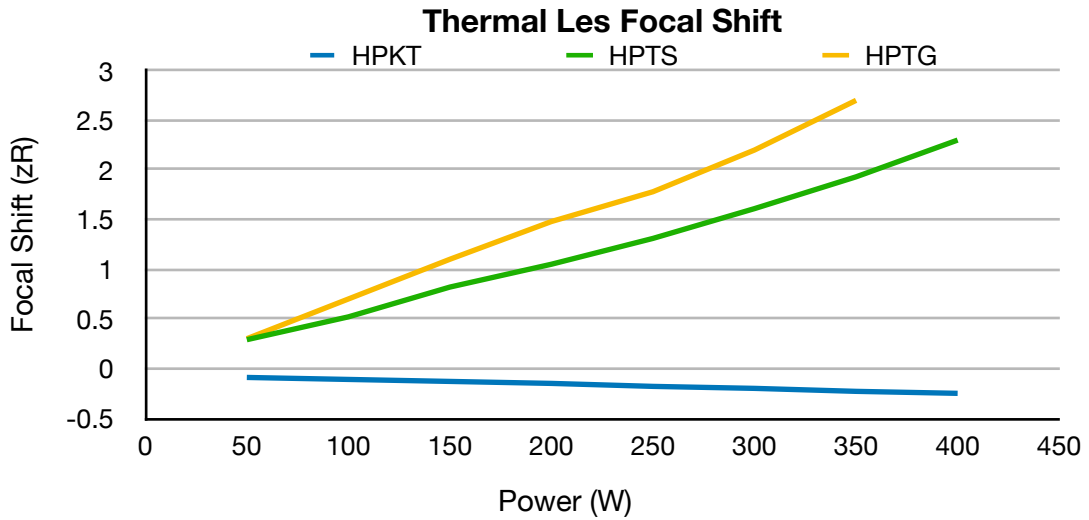
## SPECIFICATIONS

MODEL	VITG										
Working Wavelength	405nm (±10nm)	532nm (0~+10nm)	561nm (±10nm)	638nm (±10nm)	670nm (±10nm)	730nm (±10nm)	785nm (±10nm)	800nm (±10nm)	850nm (±10nm)	920nm (±10nm)	980nm (±10nm)
Clear Aperture D	2 ~ 4mm							2mm			
Rotation (Peak)	45° ± 0.5°										
Damage Threshold	3J/cm² @ 10ns										
Transmission Rate, %	>98% (Rotator); >90% (Isolator)										
Storage Temp Range	-10°C ~60°C										
Tunable Temp Range	20°C ± 10°C / On request										
Peak Isolation	>30dB (Isolator)										
Beam Pointing	<5 mrad										

## DIMENSIONS



	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)	H(mm)	K(mm)	
<b>405nm</b> (±10nm)	Ø4	27.15	60	13.5	20	24.4	31.8	30	13	3.5
<b>532nm</b> (0~+10nm)	Ø4	27.15	60	13.5	20	24.4	31.8	30	13	3.5
<b>561nm</b> (±10nm)	Ø4	27.15	60	13.5	20	24.4	31.8	30	13	3.5
<b>638nm</b> (±10nm)	Ø4	27.15	60	13.5	20	24.4	31.8	30	13	3.5
<b>670nm</b> (±10nm)	Ø4	27.15	60	13.5	20	24.4	31.8	30	13	3.5
<b>730nm</b> (±10nm)	Ø4	27.15	60	13.5	20	24.4	31.8	30	13	3.5
<b>785nm</b> (±10nm)	Ø4	27.15	60	13.5	20	24.4	31.8	30	13	3.5
<b>800nm</b> (±10nm)	Ø2	27.15	60	13.5	31.5	24.4	42.8	30	13	3.5
<b>920nm</b> (±10nm)	Ø2	27.15	60	13.5	31.5	24.4	42.8	30	13	3.5
<b>980nm</b> (±10nm)	Ø2	27.15	60	13.5	31.5	24.4	42.8	30	13	3.5



Composition	HPKT	HPTS	HPTG
<b>Transparency Range</b>		1000 – 1090nm	
<b>Absorption @1064nm</b>	~0.02% / cm	~0.12% / cm	~0.16% / cm
<b>Thermo-optic Coefficient (dn/dT)</b>	~1 x 10 <sup>-6</sup> / K	~10.3 x 10 <sup>-6</sup> / K	~17.9 x 10 <sup>-6</sup> / K
<b>Nonlinear Refractive Index</b>	~1 x 10 <sup>-20</sup> m <sup>2</sup> / W	~15 x 10 <sup>-20</sup> m <sup>2</sup> / W	~2 x 10 <sup>-19</sup> m <sup>2</sup> / W
<b>Thermal Conductivity (W/m·K)</b>	1.67	5.7	7.4
<b>Clean Aperture (mm)</b>	3.5 ~ 12	2, 3.5	3.5 ~ 70